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Postwar Residential New Towns in Japan: Constructing Modernism

by

Michelle L. Hauk

A thesis presented to the
Graduate School of Design & Visual Arts
of Washington University in
partial fulfillment of the
requirements for the degree
of Master of Science in Architectural Studies
(Concentration: the History of Architecture)

July 8, 2015
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Table of Contents

Acknowledgments	iii
Chapter 1: Introduction	1
Chapter 2: The History of National Planning Law and Practice in Japan	13
New Settlement Planning in Classical Capitals and Feudal Castle Towns in Pre-Meiji Japan	15
The Development of Modern Urban Planning Law and Techniques in Japan	19
Chapter 3: Origins of the Postwar New Town Movement	32
The Origins of the Garden City Movement and the “Neighborhood Unit”	33
Postwar Reconstruction and the Development of New Towns	44
Chapter 4: The Context of Public Housing Provision in Postwar Japan	56
The Historical and Social Context of the Postwar Dwelling	57
The History of Public Housing Prototypes from Taishō to the High-Growth Period	71
Chapter 5: Senri New Town	93
The Scope of Senri New Town and its Role in the Osaka Region	94
The Development and Organization of Senri New Town’s Master Plan	103
The Modern Apartment Dwelling in Senri New Town	121
The Status of Appliances and Quality of Life in the Modern Dwelling	132
Chapter 6: Tama New Town	137
Tama New Town and Tokyo’s Urban Fringe	138
“Hard Shell, Soft Cells:” The Planning of a Linear City	147
Tama New Town’s Green Network	161
Building over Time: Experimental Districts	168
Chapter 7: Conclusion	182
Glossary	187
Figures	193
Bibliography	205
Primary Sources	205
Secondary Sources	208

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Chapter 1: Introduction

A tall young man began to sing on a small pop-up stage in the upper plaza of the Senri Senchū Pal building. Passersby stopped, standing suddenly still nearby or settling on the nearby benches and planters as the gentle voice of the young man drew together an unlikely crowd of young children and elderly, kicking off the *PAL Street LIVE!!* event. In the background, another group gathered around a large stage on the lower plaza in anticipation of another community event while shoppers meandered between small shops and cafes that framed the multi-level pedestrian plaza. This was the “heart” of Senri New Town, Japan’s first large-scale residential new town constructed between 1961 and 1970 just thirty minutes north of Osaka city.¹ Framed by the Senri Senchū Pal building and the Selcy building, the pedestrian plaza anchored Senri Chūō Sentā (Senri Central Center) in the visionary but human-oriented approaches of postwar CIAM and drew together the surrounding community of 150,000 new town residents who live in the multi-family apartment blocks or single-family homes clustered around parks, neighborhood shopping centers, and schools to form Radburn-like neighborhood units.² With its broad, tree-lined boulevards, picturesque parks, and modernist apartment buildings, Senri New Town departed from the conventional Japanese city or suburb to offer a residential environment shaped by the state’s aspirations of the 1950s and 1960s.

In Tama Sentā (Tama Center), the “heart” of Tama New Town, Japan’s largest new town located forty-five minutes to the west of Tokyo’s Shinjuku station, commercialism and monumentality have superseded

¹ “Senri nyūtaun no rekishi [A History of Senri New Town],” *Senri nyūtaun jōhōkan: riyō no goannai* [Senri New Town Information Center: Usage Guide], Suitashi, April, 2012.

² Shigeru Tenda, “Senri nyūtaun no kore made to kongo: machibiraki kara 50-nen wo hete [Senri New Town From Past, Present to Future ~Fifty Years Since its Opening~].” *GBRC: General Building Research Corporation* 38.3 (07, 2013): 19.

the intimate, human scale of Senri Chūō Sentā, but the large pedestrian deck, designed by Ōtaka Masato, was no less active.³ Small booths selling shaved ice and chocolate-covered bananas lined the pedestrian deck in anticipation of the upcoming Obon Matsuri (Festival of the Dead) under the shadow of the large retail buildings and row of trees while shoppers bustled around the local Starbucks, Muji-rushi, and Sanrio Pūro-rando Amusement Park. Like Senri Chūō Sentā, Tama Sentā too created a focal point for the surrounding neighborhood units of the new town, which housed over 280,000 people, but also took on additional responsibility as the commercial heart of the Tama Hills region, a result of the growing consumer culture in Japan that characterized the 1970s and 1980s.⁴ The neighborhood units in Tama New Town also changed with the growing tide of consumer culture that placed new demands on the dwelling and the residential landscape to include a greater variety of dwelling types and more nuanced design of its prized green network of pedestrian pathways and parks. Tama New Town, which broke ground in 1969 and is still under construction today, is defined not by the consistency of its architecture, but by its underlying urban principles, such as the neighborhood unit, district center, transportation framework, and green network that give structure to a constantly evolving residential environment.⁵

As Japan's first new town, Senri New Town established the fundamental urban principles of the nation's postwar new town project—the neighborhood unit, the district center, and the green network—while Tama New Town, as its largest, reconfigured them in response to a changing social landscape. Together, these new towns set the parameters of the new town project in Japan, which produced 188 new towns covering more the 50,000 hectares between 1960 and 1975.⁶ This was a time of both continuity and disconnect, and the new town offered a hopeful glimpse into Japan's modern, democratic future. While

³ Kei Minohara, Hiroshi Matsukawa, and Naoto Nakajima, *Kenchika ōtaka masato no shigoto* [The Work of Architect Masato Otaka] (Tokyo: Ekusunarejji, 2014), 171.

⁴ Jūtaku toshi seibi kōdan minami tama kaihatsukyoku. *Tama nyūtaun jigyō gaiyō* [Tama New Town Project Summary] (Jūtaku toshi seibi kōdan minami tama kaihatsukyoku, 1996), 19, 25.

⁵ Ibid., “Tama New Town Project Time Line,” front fold

⁶ Toshihide Katayose, *Jikken toshi: senri nyūtaun wa ikani tsukurareta ka* [Experimental City: How Senri New Town was Built] (Tokyo: Shakai Shisōsha, 1981), 4.

the industrial city continued to develop in an ad hoc manner and new suburbs colonized the urban fringe, rapidly consuming the rural landscape, the new town offered an alternative that could order regional development, preserve the landscape, and cultivate a modern, healthy lifestyle for the new middle-class.⁷ The new town became a symbolic response to domestic crisis, bringing together a Western utopian vision with nearly a century of Japan's own urban and architectural forays into modernism. In Japan, the new town was more than an appropriation of Western ideas or even an experiment in urban form. Embedded in the project of the postwar Japanese new town was a complex interplay between a pragmatic need to address a pressing housing and environmental crisis, and an ideological need to define a new national identity through the construction of the new middle-class family.

This thesis situates Senri New Town and Tama New Town as case studies within the global postwar new town movement and the context of modern city planning and public housing provision in Japan in order to establish the threads of architectural and urban thought that shaped their form. To do this, it draws on a variety of primary sources published by the Japan Housing Corporation and its predecessors, municipal governments involved in the construction of new towns in Japan, and prominent architecture magazines that featured the new town projects contemporary with their development. Publications such as *Senri nyūtaun no kensetsu* [The Construction of Senri New Town] published by Osaka Prefecture in 1970, the *Nihon jūtaku kōdanshi* [History of the Japan Housing Corporation] published by the JHC in 1981, and *Tama nyūtaun jigyo gaiyō* [Tama New Town Project Summary] published by the Housing and Urban Development Corporation (HUDC) in 1996 not only document the processes, official datasets, and outcomes of public housing and new town projects, they also illustrate the key concepts that structured the projects and the goals that municipalities and the state hoped to achieve through them. Additionally, the images and descriptions in *Senri nyūtaun no kensetsu*, as well as other promotional material produced by local governments such as *Tama New Town at a Glance: 21seiki he mukatte habataku, Tama nyūtaun*

⁷ Tama Metropolitan Government, *Tama New Town*, (Tokyo Metropolitan Government, 1988), 1.

[Tama New Town, Flying Towards the 21st Century] published in 1988 by the Minami Tama New Town Development Office, showcase both the visions and the discourses that shaped the outcome of the new towns. Less comprehensive but equally fascinating, promotional materials like *Senrinyūtaun: hito to seikatsu* [Senri New Town: People and Lifestyle] published by Toyonaka City in 1973 paint a more complete picture of how local municipalities and the JHC envisioned modern life in the new town. Articles published in *Shinkenchiku*, *Japan Architect*, and *Kenchiku Bunka*, such as “Urban Structure and Construction: The Senri Newtown Central District Master Plan” written by the Takayama Eika Laboratory in 1967 and Akiyama Tetsukazu’s *Modanizumu jappan 1950’s → 1970’s -8- Senri nyūtaun: Hajimete no jikken toshi*” [Modernism Japan 1950’s → 1970’s -8- Senri New Town: First Experimental City] published in 1993, contribute a more analytical perspective and elaborate upon the origins of the ideas behind the new towns.⁸

This thesis also builds upon existing literature about Senri New Town and Tama New Town, although the scope of this is somewhat limited. In English, very little attention has yet been given to the development of Senri New Town and Tama New Town, although they are briefly introduced in the works such as Roman Cybriwsky’s *Tokyo: The Changing Profile of an Urban Giant* (1991) and André Sorensen’s *The Making of Urban Japan: Cities and Planning from Edo to the Twenty-First Century* (2002). These books introduce the new town project within the broader urban planning histories of Tokyo and Japan. Stephen Scott’s undergraduate thesis at the New College of Florida, “Just Housing? Evidence of Garden City Principles in a Postwar Japanese Housing Development” (2006), uses Tama New Town as a case study to

⁸ Several of these resources are available through the National Diet Library, the Tokyo Metropolitan Library, Tokyo University Library, and through the International Library Loan system at Washington University in St. Louis, but the exhibition and material at the archives at the Senri New Town Information Center, the publications, videos, and exhibitions produced by the Parthenon Tama Museum, and magazines and publications of the Tama New Town Society (provided by Dr. Sadatsugu Nishiura at Meisei University) have also been extraordinarily useful in this endeavor, providing greater insight into the processes of new town development in Japan. Additionally, conversations by the author with Meisei University professor Dr. Sadatsugu Nishiura, retired architect and Kwansei University professor Katayose Toshihide, new town researchers Yamamoto Shigeru and Okui Takeshi, Tominaga Kazuo of NPO Pompoko, and Nishimoto Shidzuki at the Senri New Town Informational Center have been a central frame of reference throughout this project.

examine the ways in which garden city principles influence the environment of the postwar Japanese residential new town, as well as its role within the Tokyo region.

Sources outside of the fields of architectural and urban history can add additional perspective to the history of postwar new towns in Japan. Kano Hiroyoshi, a professor of Southeast Asian economic studies at the University of Tokyo, provides a socioeconomic analysis of Tama New Town in Chapter Three of *Growing Metropolitan Suburbia: A Comparative Sociological Study on Tokyo and Jakarta* (2004). Kano's analysis examines Tama New Town as a commuter town in the context of the rapid development of Tokyo's suburbs through a comparison with Depok New Town in Indonesia. Estelle Ducom's paper "Tama New Town, West of Tokyo: Analysis of a Shrinking Suburb" for the University of Tsukuba written in 2008 gives an analysis of the effects of an aging and shrinking population on Tama New Town while Eran Ben-Joseph and Andrew Scott use Tama New Town as a case study to present solutions to the problem of the shrinking suburb and show how new towns can be transformed into sustainable and ecological communities in *Renewtown: Adaptive Urbanism and the Low Carbon Community* (2012). Finally, while Laura Nietzel's dissertation for Columbia University, *Living Modern: Danchi Housing and Postwar Japan* (2004) focused on the housing estates and apartment dwellings of the JHC, it offers an important perspective on postwar Japan that dovetails with this thesis. She describes the changing discourses and meanings of modern domesticity and the middle-class in the postwar period through the *danchi* (housing estates) constructed by the Japan Housing Corporation, which was also intimately involved with the construction of new towns.

Non-governmental literature presenting a comprehensive historical analysis of the postwar new town is also rare in Japanese, although articles in architecture and urban planning journals are available. Katayose Toshihide's 1981 dissertation on Senri New Town, *Jikken toshi: Senri nyūtaun wa ika ni tsukurareta ka* [Experimental City: How Senri New Town was Built] is the most thorough non-governmental account of the development of Senri New Town, outlining the conditions and thinking that gave rise to Senri New Town while critically evaluating the problems that have emerged in large-scale

Japanese new towns in order to open up a larger conversation about place-making and *machizukuri* (town planning) in Japan.⁹ This work is both a compendium and evaluation of the project. Ueno Jun and Matsumoto Masumi also provide an evaluation of Tama New Town in *Tama nyūtaun monogatari: Ōrudotaun to yobasenai* [Legend and Topics on Tama New Town: It Cannot be Called an Old Town] published in 2012 that analyzes the project from the perspective of an aging society. They open the book with a brief history that situates Tama New Town in relation to Clarence Perry's Radburn.

Because much of the history available on Senri New Town and Tama New Town was produced by the same institutions that designed and built them, this thesis seeks to place the projects within a broader social and historical perspective. To do this, this thesis is divided into five chapters in addition to the introduction and conclusion. *Chapter 2* addresses the history of urban planning law and state-led urban planning schemes, while *Chapter 3* explores the relationships between the garden city, the international new town movement and postwar regional planning and new towns in Japan. *Chapter 4* returns to Japan to focus on the historical context of public housing provision and the development of the now ubiquitous nLDK Apartment type constructed by the JHC. These threads come together in the final two chapters to show the urban principles and modernist public housing prototypes that shaped the development of Senri New Town and Tama New Town. *Chapter 5* describes how the neighborhood and cluster system of Senri New Town reflected aspirations of the new middle-class lifestyle, while *Chapter 6* describes Tama New Town's "hard shell, soft cell" framework that made the project adaptable to changing expectations over time. Together these chapters begin to draw out the institutional, intellectual, and architectural histories that shaped the outcome of the postwar new town.

Chapter 2 examines the context of the urban planning laws that gave rise to Japan's postwar new towns, tracing the ways in which Japan appropriated and adapted Western planning and architectural theory

⁹ Toshihide Katayose, *Jikken toshi: senri nyūtaun wa ikani tsukurareta ka* [Experimental City: How Senri New Town was Built] (Tokyo: Shakai Shisōsha, 1981), 4, back matter. Katayose, who graduated from Kyoto University, worked at the Osaka Prefectural Public Enterprise Bureau from 1962 through 1970 during Senri New Town's development and contributed to its design.

within its own context throughout the twentieth century. Although both the ancient state and the Tokugawa *bakufu* (military regime) used new settlement planning as a means of statecraft, postwar new towns have their origins in the planning laws and practices that began with the Meiji elite after the Meiji Restoration in 1868. After Japan opened its doors to the West and restored Imperial rule, it entered an age of appropriation and experimentation as it imported Western expertise (and experts) to advise in a variety of disciplines, including architecture and urban planning. The Meiji government did not have the capacity to construct any sweeping visionary plans, as most resources were directed to building Japan's industrial and military capacity, but through the Construction Bureau and the newly founded Tokyo Imperial University, Western construction techniques, materials, architectural styles, and planning principles were diligently studied by the nation's first generation of architects under the tutelage of architects like Josiah Conder and Thomas James Waters.¹⁰

Japan's first wave of planning legislation emerged from this climate to be largely infrastructural rather than visionary, but was no less important. The 1888 Tokyo City Improvement Ordinance initiated a thirty-year program focused on the development of water, road, and sewerage infrastructure while the 1919 City Planning Law produced the first national city planning system and included the nation's first building code, which was drawn up by Tokyo Imperial University graduates Sano Toshikata, Uchida Yoshizō, and Kasahara Toshiro.¹¹ These laws laid the groundwork for a second wave of legislation in the 1950s that concentrated planning power in the hands of the central government and strengthened land readjustment rights to ease reconstruction and infrastructural developments after the war, such as the 1954 Land Readjustment Law.¹² Meanwhile, city planning developed largely as an academic exercise and Japan's colonies became a site of experimentation as Japanese architects and planners like Uchida

¹⁰ Eizō Inagaki, *Nihon no kindai kenchiku* [Modern Architecture of Japan] (Tokyo: Chuokōrin bijutsu shuppan, 2009), 352-353.

¹¹ André Sorensen, *The Making of Urban Japan: Cities and Planning from Edo to the Twenty-First Century* (London: Routledge, 2002), 109-110.

¹² Shun-ichi J. Watanabe, "Toshi keikaku vs machizukuri," in *Living Cities in Japan: Citizens' Movements, Machizukuri and Local Environments*, ed. André Sorensen, and Carolin Funck (London: Routledge, 2007), 46.

Yoshizō and Takayama Eika drew up magnificent Western-style urban plans for Manchurian cities impossible to implement in Japanese cities. Even after the war, state-mandated plans, such as the 1958 National Capital Region Development Plan (NCRDP) had little effect and more visionary plans like Ishikawa Hideaki's 1946 reconstruction plan for Tokyo and Tange Kenzō's plan for Tokyo Bay remained largely a dream.¹³ (These plans are addressed in *Chapter 3*). The passage of the 1963 New Residential Town Development Act opened the door to more visionary planning that could never be achieved in the city, offering architects and the state the opportunity to fully design a residential environment from the apartment unit to the district center.

Chapter 3 explores the origins of the postwar new town movement and its appeal to Japan as it adapted first the garden city and later the new town to its own urban and social landscape. This thread runs contemporary to the development of urban planning and showcases the ways in which Japan interpreted Western planning principles in the twentieth century as it grappled with its own changing landscape. The postwar new town, a state-led new satellite town project often situated within a larger regional vision, had its origins in Ebenezer Howard's garden city, but was also shaped by the theories of Clarence Perry, Sir Patrick Geddes, and the International Congress of Modern Architecture (CIAM), an organization of the world's leading architects and planners founded in 1928. The garden city was, in fact, almost immediately subverted into the privately developed garden suburb, particularly in the United States and Japan where qualities of the residential environment were emphasized over Howard's social vision. In Japan, the verdant environment of the garden suburb satiated a growing romanticism of the rural landscape, called the "pastoral ideal," while the American garden suburb of Radburn folded Perry's neighborhood unit into the design as the fundamental building block of the community.¹⁴

¹³ Carola Hein, "Visionary Plans and Planners: Japanese Traditions and Western Influences," in *Japanese Capitals in Historical Perspective: Place, Power and Memory in Kyoto, Edo and Tokyo*, ed. Nicolas Fiévé, and Paul Waley (London: New York: RoutledgeCurzon, 2003), 309-342.

¹⁴ Ken Tadashi Ōshima, "Denenchōfu: Building the Garden City in Japan," *Journal of the Society of Architectural Historians* 55, no.2 (06, 1996): 141, accessed December 12, 2014, <http://www.jstor.org/stable/991116>.

The postwar new town, particularly the Japanese new town, paid careful attention to the residential environment, fully employing garden city elements like the greenbelt as well as the neighborhood unit of the American garden suburbs, which would be used as a structural urban building block. Despite these clear overlaps, postwar new towns were not simply over-scaled versions of the garden suburb. This chapter also explores the failed attempts of decentralist and visionary planning by the Japanese state, as well as by prominent architects of the postwar period, that preceded Japan's new town project in order to situate them both within Japan's postwar reality and the international new satellite town movement. Finally this chapter examines the theories produced by the CIAM congresses that influenced the Japanese and Scandinavian new towns, setting them apart from their low-rise British predecessors. Both the *Existenzminimum* of CIAM 2 and the "Heart of the City" of CIAM 8 had a significant impact on the postwar new town. A synthesis of many ideas, the postwar new town crafted a new type of residential community for Japan.

Chapter 4 addresses the historical context of public housing provision in Japan and the forces that shaped its development in the postwar period. Japan's postwar new towns were built both to test Western new town planning principles and also to help stem the effects of a severe housing crisis that held the nation's cities back even while it entered a period of unprecedented economic growth. Devastated by war-time bombing and a lack of resources, Japan's cities faced mounting pressures as the government turned its attention exclusively to economic and industrial growth under the guidance of the Ministry of International Trade and Industry (MITI). An influx of migrants from the countryside and former colonies flooded the already dense and dilapidated city while urban dwellers coped with overcrowding, industrial pollution, and a deteriorating and poorly serviced housing stock.¹⁵ These conditions prompted a renewed romanticization of the rural landscape and a very real desire to escape the dirty industrial city in the rapidly developing suburbs along the urban fringe.

¹⁵ André Sorensen, and Carolin Funck, *Living Cities in Japan: Citizens' Movements, Machizukuri and Local Environments* (London: Routledge, 2007), 158-159.

The state did not begin to seriously address this housing crisis until 1955, when it established the Japan Housing Corporation (JHC) to produce large quantities of dwelling units for middle class families in housing estates, and later new towns, across the country. Responding to an emerging discourse surrounding the middle-class nuclear family that was invoked by a national identity crisis, the JHC drew upon the work of its predecessor, the Dōjunkai Foundation, (which had produced the first modern public housing prototypes in Japan), as well as the work of the Yoshitake Laboratory at Tokyo University, who produced the 51C Apartment type based on Nishiyama Uzō's research on the separation of sleeping and eating within the modern dwelling. The JHC championed the lifestyle of the modern *sarariman* (white-collar salary man) and his family, constructing the dwelling and unit around his imagined patterns of living. When the JHC began construction on Japan's postwar new towns in the 1960s, in partnership with municipal governments and local public housing agencies, the nDK Apartment it refined in its first housing estates dominated the landscape of the new town, disseminating a new domestic paradigm.

Chapter 5 analyzes Japan's first new town, Senri New Town, located in the northern suburbs of Osaka, an industrial city that faced dire housing conditions, a severe housing shortage, and heavy pollution following the war. While visionary regional plans were never carried out for Osaka, the prefecture was able to begin research for a new satellite town to its north by 1955. Collaborating with the JHC, local public housing agencies, and research institutions, the Osaka Prefectural Public Enterprise Bureau constructed Senri New Town between 1961 and 1970.¹⁶ Senri New Town was organized using a hierarchical "cluster system" that used the neighborhood unit as its fundamental building block and the district center as the focal point of the community to create an ideal residential environment that offered a minimum standard of living, ample open space and sunlight, and access to shopping, entertainment, and education within walking distance. The project was heavily shaped by the theories of Nishiyama Uzō, who worked on the initial proposals, and Takayama Eika, whose laboratory prepared the master plan and

¹⁶ "Senri nyūtaun no rekishi," *Senri nyūtaun jōhōkan: riyō no goannai*.

the plan for the largest district center, Senri Chūō Sentā (Senri Central Center). It also drew upon the postwar new town movement, the theories of postwar CIAM, and the American garden suburb model for inspiration. Senri New Town was the quintessential postwar Japanese new town, creating a model not only for the new towns that would follow, but also for the lifestyle of the new middle-class.

Chapter 6 addresses the first twenty years of Tama New Town's development, the largest new town in Japan located to the west of Tokyo. Like other postwar new towns, Tama New Town was initially constructed to address the housing crisis that continued to haunt Tokyo well into the high-growth period, but this changed when the housing crisis ended in 1973, reorienting the objective of the project from quantity to quality.¹⁷ Construction for Tama New Town began in 1969 after seven years of preparation, and is still continuing today.¹⁸ Because of this, it has been shaped by the changing expectations of its residents as well as by greater forces, such as the oil shocks of 1973. This was possible because of the flexibility of the "hard shell, soft cell" linear city framework designed by Konno Hiroshi in the 1960s, which structured the "soft cell" neighborhood units within a skeletal infrastructure, or the "hard shell," that links them to a series of commercial district centers.¹⁹ The standardization and homogeneity of the modern residential environment began to break down in Tama New Town as it became a testing ground for new ideas about form and domesticity in a consumer age.

These two case studies, Senri New Town and Tama New Town, showcase two different eras of the postwar new town movement in Japan. Senri New Town, Japan's first new town and a model for its development, reflects the ambitions of the high-growth period, when the nation sought to reimagine its national identity, and with it the landscape and lifestyle of the new middle-class. It introduced a rational, modern approach to planning that could counteract the haphazard growth of the suburbs through master

¹⁷ Yasuhiro Naruse and Kenji Takahashi, "Tama New Town," edited by Sadatsugu Nishiura, presented at Steedman Summer Travel Fellowship Meeting on Tama New Town, Tama City, Japan, August 11, 2014, 34.

¹⁸ Jūtaku toshi seibi kōdan, "Tama New Town Project Time Line," in *Tama nyūtaun jigyō gaiyō*, front fold.

¹⁹ Hiroshi Konno, "Urban Development and Road Building: A Brief History of Tama New Town," *Wheel Extended* no.73, (1990): 11

planning, preserve rapidly diminishing open space in a series of parks, and construct community through the neighborhood unit and pedestrianized district center. Tama New Town began construction only a decade later, but did so in the wake of a growing tide of consumerism that placed new expectations on the residential environment it hoped to create. Adequate housing was no longer enough. Japan had successfully disseminated a discourse of the new middle-class, and by the late 1970s, expectations had shifted. Tama New Town's "hard shells, soft cells" framework gave it the flexibility to respond over time within the neighborhood units, structuring the new town within a skeletal infrastructure and unifying it with a green network that connected dwellings, parks, and schools to the district centers with tree-lined pedestrian pathways. Despite these changes, Tama New Town remained as visionary as Senri New Town, hoping to provide an ideal residential environment to Japan's middle-class. The postwar new town project was an ambitious one that sought to address Japan's severe housing crisis and offer a model for suburban development at a time when suburbanization was out of control; but it was also a visionary response to a pragmatic problem. In building the postwar new town Japan hoped to build a new middle-class, and with it, a new national identity.

Chapter 2: The History of National Planning

Law and Practice in Japan

By the time Japan initiated a national new town project with the passage of the New Residential Town Development Act in 1963, its own version of the Britain's 1946 New Towns Act, the nation had spent nearly a century studying, appropriating, and applying Western planning theory to its own urban planning practice.¹ New settlement planning was practiced in the Japanese archipelago by both the ancient state, who looked to China as a model, and the Tokugawa *bakufu* (military regime), who imposed a sense of social order on the city through spatial hierarchy within its castle towns. Today, these urban structures underlay the ad hoc and fine-grained fabric that characterizes many of Japan's greatest cities. Following the upheaval of the 1868 Meiji Restoration, Meiji government officials once again looked outward for models of urban planning and architectural practice. As they began to search for new ways to restructure the nation's social and political order, the government sent officials abroad to study the West and invited specialists to the nation to share their expertise in its new universities and aid in building the foundations of a variety of disciplines, including architecture and city planning. This ushered in an age of appropriation and experimentation as the newly formed imperial government encountered Western cities and ideas after centuries of self-imposed isolation. The new empire turned its attention towards building a "Rich Country, Strong Army," ambitiously studying the West to achieve its goals.² As Japan struggled against its limited resources to catch up with the West, urban planning became mostly an infrastructural

¹ André Sorensen, *The Making of Urban Japan: Cities and Planning from Edo to the Twenty-First Century* (London: Routledge, 2002), 185-187.

² Eizō Inagaki, *Nihon no kindai kenchiku* [Modern Architecture of Japan] (Tokyo: Chuokōrin bijutsu shuppan, 2009), 353.

project supported by the nation's first wave of planning legislation, such as the 1888 Tokyo City Improvement Ordinance (TCIO), while more visionary plans produced by foreign specialists, such as William Böckmann and Hermann Ende, remained on the periphery of actual practice.³ Nevertheless, Western ideas and techniques were gradually folded into Japanese urban planning and architecture through small-scale projects and planning law.

The planning legislation that emerged out of this context, such as the 1919 City Planning Law, shaped the development of Japan's cities throughout the following century, establishing the framework through which the central government would affect urban change. As the nation expanded into Southeast Asia with the rise of colonialism in the early twentieth century, projects in Japan's colonies, most notably Manchukuo (Manchuria), became valuable opportunities for Japan's most prominent architects and planners to test visionary Western planning techniques that could not be built on the archipelago. Many of the figures involved in writing planning legislation and working on visionary plans for the colonies, such as Uchida Yoshizō and Takayama Eika, would later shape the principles behind Japan's postwar new towns through their own work and the work of students at the University of Tokyo, which maintained a close working relationship with bureaucratic planners throughout the twentieth century. After its defeat in World War II, the nation began to revise its planning laws and propose new legislation that would enable the country to reconstruct its cities, and with it, its national identity. While many of the reconstruction plans produced in the fifteen years after the war ultimately had little effect—such as the National Capital Region Development Plan (NCRDP) of 1958, which ambitiously proposed greenbelts and satellite cities hoping to restructure the city along decentralist lines—planning legislation such as the 1954 Land Readjustment Act and the 1963 New Residential Town Development Act, paved the way for

³ Carola Hein, "Visionary Plans and Planners: Japanese Traditions and Western Influences," in *Japanese Capitals in Historical Perspective: Place, Power and Memory in Kyoto, Edo and Tokyo*, ed. Nicolas Fiévé, and Paul Waley (London: New York: RoutledgeCurzon, 2003), 312-314; Sorensen, *The Making of Urban Japan*, 57, 67.

the conceptualization and construction of new towns across the nation.⁴ When the nation began construction on new towns in the 1960s, it did so with nearly a century of experimentation with Western thought and an even longer history of state-led new settlements. From the Chinese-style capital cities of classical Japan to the Western-style new towns built during the postwar period, city planning in Japan functioned as a technology wielded by the state to construct a new urban, social, and political vision.

New Settlement Planning in Classical Capitals and Feudal Castle Towns in Pre-Meiji Japan

As newly constructed satellite settlements, postwar Japanese new towns embodied the newly democratic state's vision of a modern society, but the practice of building new settlements for social and political purposes dates back much further, to classical Japan. New capitals in classical Japan tended to correspond with the establishment of new imperial regimes, a practice that peaked in the Nara Period (710-794 AD) when Japan was in close contact with Tang Dynasty China.⁵ China's influence on Japan began in the Asuka Period (538-710 AD), but it was during the Nara Period that this influence was directly applied to architecture and urban planning as a means of solidifying power through the proliferation of Buddhist temples and the construction of new capitals modeled after Chang-an and Lo-yang. Power in classical Japan was not a function of military might alone; rather it was also a psychological and spiritual process, one that could arguably be enhanced through an architectural program. By the Nara Period Buddhism had already spread to Japan and the erection of Shinto Shrines and Buddhist temples "reinforced the position of a sovereign as a divine mediatory," while new Chinese-style capitals "symbolized [the Emperor's] at the 'sacred center' of Japan's this-worldly order."⁶ The

⁴ Marco Amati, *Urban Green Belts in the Twenty-first Century*, (Aldershot, England: Ashgate, *eBook Collection (EBSCOhost)*, EBSCOhost, 2008), accessed April 19, 2015, 25-56.

⁵ "Asia for Educators: 600 to 1000: Expanding Zones of Exchange and Encounter," *Asia for Educators*, Columbia University, last modified in 2009, accessed in January 2015, http://afe.easia.columbia.edu/tps/600ce_jp.htm#nara.

⁶ Naoki Kōjirō and Felicia G. Bock, "The Nara State," in *The Cambridge History of Japan Volume 1: Ancient Japan*, ed. Delmer M. Brown (Cambridge: Cambridge University Press, 1993), 227-230, doi: 10.1017/CHOL9780521223522.

new capitals of the classical period served to legitimize the power of the imperial state as “spectacular symbols” that encompassed political, religious, and military might.⁷

Chinese-style capitals were symbolic and regal, expressing the new power and hierarchy of the new imperial regime through urban form, most notably the grid-iron plan, axiality, and orientation. Fujiwara was the first full-scale capital to be built in the Chinese-style in 694 AD under the reign of Empress Jitō. Modeled most likely after either Lo-yang in Northern China or Luoyi, the orthogonal city was oriented towards the south and surrounded by mountains to the north, east and west. The new capital included a walled palace containing “the imperial audience hall,” the imperial residence and the administrative state, as well as an urban center for residents of the aristocracy and administration, some marketplaces and other important buildings.⁸ The structure of the new capital symbolized the growing importance of governmental office as well as imperial power by placing the palace so prominently and centrally within a city designed for administrative ease.⁹ Architecture became a mechanism for the transformation of social order with each new regime. Similar capitals, like Nara and Nagaoka, were constructed with the establishment of new dynasties throughout the following century, refining the Chinese-style plans to suit Japan’s landscape and customs.¹⁰ This practice ended with the establishment of Heian (Kyoto) by Emperor Kanmu (the same emperor who constructed Nagaoka) in 794 AD, marking the end of the Nara Period. Heian was based more on the much smaller Fujiwara capital than on Chang-an, which was far

⁷ Ibid., 221.

⁸ Ellen Van Goethem, “Chapter Seven: The Basic Plan of a Chinese-style Capital City,” in *Nagaoka: Japan’s Forgotten Capital* (Leiden, Boston: Brill, 2008), eBook Collection (EBSCOhost), EBSCOhost, accessed April 19, 2015, 139-212. Fujiwara, Nara, Nagaoka, and Heian (Kyoto) were four of the most important Chinese-style capitals. Two other capitals were constructed between 694 and 794: Kuni and Naniwa. They are not addressed here because their urban structure is not yet clearly understood.

⁹ Kōjirō and Bock, “The Nara State,” 229-230.

¹⁰ Van Goethem, *Nagaoka Japan’s Forgotten Capital*, 35-68, 143; Kōjirō and Bock, “The Nara State,” 241-245. Nara, built in 707 AD amidst imperial upheaval, was located directly north of Fujiwara. Nara referenced many of the same geographical features of Tang Dynasty capitals that Fujiwara did, but had significant economic advantages due to its superior location between the Kizu and Saho Rivers and was more carefully integrated with the topography. Nagaoka replaced Nara in 784 AD at a time of turmoil for Nara and its leaders. Other forces may have also contributed to the move, such as the deterioration of existing building stock, increasing complexity of building construction, and growing water-supply issues. There were also concerns about the growing power of and perceived corruption within Buddhist temples. It departed from earlier capitals by separating the imperial residence from the administrative halls. Japanese imperial capitals often grouped administrative and imperial functions together before this. Also, because they were rarely walled, they had a more open quality than their Chinese counterparts.

more heavily fortified than its Japanese counterparts and was carefully organized into different districts within a street grid and imperial palace placed to the north.¹¹ Designed for longevity, Heian marked the end of the classical practice of building new capitals, as Kanmu's successors "no longer had the strong personal power required to enforce a transfer of capitals."¹² The superiority of the site, with less flooding and better views, may have also played a role in the move and its permanence.¹³ Heian remained the imperial seat for nearly 1000 years, waning and waxing in power over time until the establishment of Edo (now Tokyo) in 1603 by the new Tokugawa regime.

New settlements once again became a means of social and political restructuring in the Tokugawa Period (1603-1868), when a new military regime established hegemony over Japan. A new capital project was once again undertaken with the construction of Tokugawa Ieyasu's castle and military headquarters on the Musashino Plateau in the Kantō Plains. Whether Edo itself was actually a new town is debatable, as small settlements already existed near Tokyo Bay. Nevertheless, with the reorganization of society under Tokugawa rule, Japan saw an enormous shift in urban structure and "one of the world's greatest periods of planned new town development," according to urban geographer André Sorensen, as new castle towns were built throughout the archipelago in order to increase production of weapons and other goods.¹⁴ These new castle towns of a few thousand people were carefully organized politically, socially, and spatially into established precincts and permanent residences that reflected an increasingly rigid social structure of *samurai* (warriors), artisans, merchants, and peasants. This status separation, which solidified by the beginning of the seventeenth century, was paralleled by edicts that required samurai to reside around the *daimyō's* (feudal lord's) castle rather than in villages. Historians Nakai Nobuhiko and James L. McClain wrote that "to a large degree, the military and economic requirements of the age influenced

¹¹ William H. McCullough, "The Capital and its Society," in *The Cambridge History of Japan Volume 2: Heian Japan*, ed. Donald H. Shively and William H. McCullough (Cambridge: Cambridge University Press, 1999), 97-123, doi: 10.1017/CHOL9780521223539.004.

¹² Van Goethem, *Nagaoka Japan's Forgotten Capital*, 263.

¹³ *Ibid.*, 248, 254.

¹⁴ Sorensen, *The Making of Urban Japan*, 6-25.

the internal spatial arrangement of the castle towns,” such that status assumptions were clear in the physical layout.¹⁵ The castle, rather than the street grid, became the organizing element of the new castle towns that proliferated around the country as daimyō worked to secure their domains. Typically housing for lower samurai and townspeople would be organized by rank in a centrifugal pattern around the castle. Higher-ranking samurai would reside directly around the moat and wall protected castle while the lowest ranking retainers lived in cramped *nagaya* (wooden rowhouses) on the periphery of the town. Artisans and merchants lived in wards organized by occupation in between the two samurai groups with living conditions and land allotments varying by status. This was because the lowest samurai and large Buddhist temples were located on the periphery for defense purposes, at least until a growing urban fringe disrupted this ideal model.¹⁶ The hierarchical structure of castle towns is still visible in many Japanese cities today, most notably Tokyo.

The structure of the feudal city also reflects the enormous commercial changes of the Tokugawa Period, as urban samurai were generally not self-sufficient and relied on a growing body of artisans and merchants for goods, a marked shift from their earlier more rural lifestyles. Castle towns thus expanded rapidly, first with a wave of samurai and then an influx of rural migrants seeking to capitalize on the commercial and urban growth of the period. At the same time, there was a significant shift in household arrangement from extended farm families to smaller, nuclear peasant families.¹⁷ Such changes transformed not only the city, but also the patterns of domesticity across social class, which took on new meaning through changes in material culture and lifestyle. Susan B. Hanley, a Japanologist and historian, describes the role of housing in defining domesticity in Tokugawa period cities, pointing out that in addition to indicating wealth, housing determined “how members carried out their daily work, related to

¹⁵ Nobihiko and McClain, “Commercial Change and Urban Growth in Early Modern Japan,” 524-529.

¹⁶ Ibid., 530, 541.

¹⁷ Ibid., 328, 539.

one another, and learned their place in the world.”¹⁸ The floor, she noted, was the most symbolic of higher standards of living, as adding a raised floor implied more cleanliness and hygiene. Dwellings themselves were organized around the division between living and service areas; the floor invariably demarcated this separation. The basic typologies of housing also tended to respond to status and occupation, much like the location of the dwellings within the city, with receiving rooms for samurai, shop fronts for merchants, and workshop spaces for artisans.¹⁹ These architectural and urban forms actively reflected, and in many ways also codified, the feudal social and political structure of the Tokugawa period. Like the classically planned new capitals and new castle towns that both symbolized and helped construct the political, social, and urban structures of their time, postwar Japanese new towns too would reflect a greater social vision through built form.

The Development of Modern Urban Planning Law and Techniques in Japan

In the Meiji Period (1868-1912), Japan once again began looking to foreign countries for models of how to restructure its cities within a newly defined political and social framework, and while many of these models could not be directly applied to Japanese cities in the early Meiji Period, the urban planning laws and theories explored at this time laid the groundwork for Japanese urban planning practice throughout the twentieth century. The 1868 Meiji Restoration toppled the feudal Tokugawa regime and restored imperial rule, opening the doors to the West and modernization. Japan was already highly urbanized by the beginning of the Meiji Period—over one million inhabitants lived in Tokyo alone—but the city itself was entrenched in its feudal past. Meiji government officials were, therefore, eager to tap into European urban planning and architectural expertise to rapidly modernize the country. Predominantly composed of dense one or two-story wooden buildings, narrow streets, and canals, the feudal cities had been low-rise

¹⁸ Susan B. Hanley, “Tokugawa Society: Material Culture, Standard of Living, and Life-styles,” in *The Cambridge History of Japan Volume 4: Early Modern Japan*, ed. John Whitney Hall (Cambridge: Cambridge University Press, 1991), 662-665, doi: 10.1017/CHOL9780521223553.014.

¹⁹ Ibid., 665-681. Innovations, such as the *shoin* writing desk, *tatami*, *genkan*, and *tokonoma* came to define the dwellings of the Tokugawa period.

and crowded with little space left over for parks or plazas. Most of the public space that was available was located on the grounds of temples and shrines that “performed many of the functions associated in the West with urban parks” and provided an important venue for festivals, performances, and other public events of the early modern city.²⁰ Communities were also fine-grained, organized into spatially and geographically distinct *machi* (neighborhoods), an element that continued to form the “foundation of Japanese urban thought” well into the twenty-first century according to architecture and urban planning historian Carola Hein.²¹ The grandiosity of scale and open space in Western cities stood in contrast to Japan, impressing members of the 1871-73 Iwakura Mission, who hoped to transform the international image of their city and introduce a break from the feudal past. Modeling new city planning ideas after Britain, France, and Germany they sought to create a world-class capital that would symbolize the “Rich Country, Strong Army” motto of the day. Meiji period bureaucrats developed new goals to reorganize the dense ad hoc city of numerous *machi* and to mitigate of fire risk, including the straightening and paving of streets and bridges, designating of open and green spaces, and improving of key urban infrastructure.²² As Japan sought to redefine itself in the wake of the Meiji Restoration, Western urban models offered a hopeful alternative to the feudal city.

Meiji officials actively imported Western thinking into Japanese architectural and urban practice and worked diligently to master foreign models, which architectural historian Inagaki Eizō accredits to the “Rich Country, Strong Army” mentality that drove Japan’s quest to catch up with the West. Immediately following the Meiji Restoration in 1868, the new government established a Construction Bureau staffed with thirteen foreign architects, including Josiah Conder and Thomas James Waters, who went on to educate the first generation of native Japanese architects in the following decades. These figures were

²⁰ Sorensen, *The Making of Urban Japan*, 31.

²¹ Carola Hein, “Machi: Neighborhood and Small Town—The Foundation for Urban Transformation in Japan,” *Journal of Urban History* 35, no.1 (11, 2008): 75.

²² Sorensen, *The Making of Urban Japan*, 12, 40-53; Eizō Inagaki, *Nihon no kindai kenchiku* [Modern Architecture of Japan] (Tokyo: Chuokōrin bijutsu shuppan, 2009), 353. The Iwakura Mission sent 50 officials and 59 students overseas to inspect various institutions and cities across the United States and Europe. This mission had a lasting impact on urban planning and architecture, as well as on the Japanese military, government, and educational system.

instrumental in the introduction of Western architectural “materials, motifs, and styles” in Japan, even though they did not yet inspire the development of a native tradition.²³ Many of the earliest Western-style buildings in Japan were constructed of wood and based on American models, although brick and other masonry technology was also introduced. Architects began experimenting with masonry buildings on an urban scale in projects like the Ginza Brick District by Waters in 1872-1877 and the Marunouchi brick office building district funded by Mitsubishi in 1890, an eclectic Western-style architecture ornamented with Japanese motifs began to emerge. In the 1890s, Japan’s first wave of national Western-trained architects, such as Motokuma Katayama, Kingo Tatsuno, Takamasa Niinomi, and Yuzuru Watanabe, graduated in the 1890s from the Imperial College of Engineering. As a combination of Western and Japanese styles called Eclecticism emerged and a new Western-style architecture gradually began to take root in Japan.²⁴

The ambition to introduce Western-style architecture and urban planning to the Japanese city was strong, but in reality large-scale projects were difficult to execute. (This problem would continue to plague Japan throughout the twentieth century.) During the Meiji Period, institutional buildings naturally provided the most opportunity for the development of these new ideas. The first regional plans for Tokyo also emerged out of this context, with Tokyo governor Matsuda Michiyuki’s Tokyo Plan published in 1880. His plan referenced Paris as a model by concentrating commerce near the port and redeveloping central buildings into multi-story stone buildings across Tokyo’s fifteen wards.²⁵ Although this plan was never carried out (Japan had very little funding for urban and architectural projects at the time), it nevertheless reflected the young nation’s ambitions. Matsuda’s plan was countered by another proposal produced under Minister Kinoue Kaoru’s Foreign Ministry, which Carola Hein calls a “‘grand design’ without

²³ Inagaki, *Nihon no kindai kenchiku*, 345.

²⁴ Ibid., 347-357.

²⁵ Sorensen, *The Making of Urban Japan*, 64-65.

vision” because it too ultimately failed in its “attempt to monumentalize Tokyo.”²⁶ The 1886-87 *Kanchō shūchū keikaku* (Project for Concentrating Government Offices in Hibiya) by William Böckmann (1832-1902) and Hermann Ende (1829-1907) was one of the most ambitious proposals of its time, and included designs for a new Diet building, other government buildings, and a rail station along broad, majestic avenues. The large-scale urban project drew upon German Baroque urban planning principles and was intended to impress foreigners with its grand masonry buildings and wide boulevards so that unfair treaty practices imposed on Japan would be eased.²⁷ Regrettably, the plan was never actualized, and a pattern of privileging infrastructural development over visionary planning began to take shape.²⁸

Although the Meiji Period produced no influential plans for the city and integration of Western thought into architectural and urban planning practice was in its infancy, it did give rise to the nation’s first wave of planning legislation that would shape how Japanese cities would develop in the following century. In 1873, the Meiji government passed the Land Tax Act, dramatically transforming land ownership and revenue collection through the assessment of land value. This created a class of small-scale landowners as well as a system of land registration that allowed land to be bought or sold.²⁹ The cabinet passed the first comprehensive planning system with the inauguration of the Tokyo City Improvement Ordinance (TCIO) in 1888, establishing a “national program [oriented] toward the modernization of the imperial capital of Tokyo through the improvement of public facilities such as roads and parks.”³⁰ The TCIO was essentially an infrastructural plan, not a building code or a visionary plan for the city, focusing first on the development of water infrastructure (1888-1899), road improvements (1900-1910) and finally sewerage projects (1911-1918). It also enabled the development of Hibiya Park, one of Tokyo’s only large parks, although it was intended more as a statement of monumentality than a place for public leisure. These

²⁶ Hein, “Visionary Plans and Planners,” 312.

²⁷ Sorensen, *The Making of Urban Japan*, 67.

²⁸ Hein, “Visionary Plans and Planners,” 312.

²⁹ Sorensen, *The Making of Urban Japan*, 57.

³⁰ Shun-ichi J. Watanabe, “Toshi keikaku vs machizukuri,” in *Living Cities in Japan: Citizens' Movements, Machizukuri and Local Environments*, ed. André Sorensen, and Carolin Funck (London: Routledge. 2007), 46.

efforts did not succeed in reorganizing the city or creating public space, but they did concentrate planning power in the hands of the central government and begin the process of modernizing the city. The nation's first city planning system was finally introduced with Ikeda Hiroshi's 1919 *Toshi keikaku ka* (City Planning Law). At the same time, Tokyo Imperial University professors, Sano Toshikata, Uchida Yoshizō, and Kasahara Toshiro drafted the nation's first building code, the *Shigaichi kenchikubutsu hō* (Urban Buildings Law).³¹ The city planning system consisted of five main parts: land use zoning, a building code, a building-line system, facility designations, and a land readjustment policy. Although the law did not require a rigid separation of land zone types, it did establish a framework for the city and designated special zones meant to preserve scenic and cultural areas, as well as establish fire prevention zones. The introduction of a land readjustment policy also enabled the government to move forward more easily with the development of hard infrastructure. This would later prove critical to urban planning and reorganization throughout the twentieth century, particularly in the construction of large-scale housing estates and new towns following World War II. Although it ultimately failed to introduce coveted green space into the city or radically transform it, the 1919 city planning system did help the government to gain some control over the already rapidly developing urban fringe, creating more orderly cities and defining street grids.³² Ultimately it established the framework through which the central government would impact the city.

Japan's exploration of new urban planning techniques was not limited to the archipelago and in many ways it had more latitude in its colonies to explore grand ideas. Seeing urban planning as a "manifestation of order, civilization and modernization," the government employed it as another tool of imperial administration in the early twentieth century in the colonies, which it treated as a "laboratory"

³¹ Sorensen, *The Making of Urban Japan*, 68-73, 109-110; Watanabe, "Toshi keikaku vs machizukuri," 46-47.

³² Sorensen, *The Making of Urban Japan*, 115-124. The city planning system also began to specify land use and coverage, building heights, materials, window area, and public right-of-ways in addition to designating land for facilities and hard infrastructure. The land readjustment policy required landowners to pool their land holdings and contribute thirty percent to the project for infrastructural development if two-thirds of landowners agreed to the readjustment

for its newest ideas. The empire embarked on a massive project of construction in the colonies, including in Manchuria, Korea, and Taiwan, where many architects and urban planners lived until the end of the war.³³ Dairen (Dalian) and Shinkyō (Changchun)—two fully planned cities in Manchukuo (Manchuria)—considerably influenced urban planning in Japan following the war and formed the apex of colonial planning efforts, as did Daidō (Datong) near Beijing. These projects became testing grounds for urban planning ideas that could not be carried out easily in the Japanese archipelago. The colonies were a chance for Japanese architects and planners to practice blank-slate design on a large scale, which nurtured the growth of many influential postwar planners and architects. Dairen, a port city in the Japanese-controlled Manchukuo territory, housed the headquarters of the South Manchurian Railway (SMR) that owned a significant amount of the city, as well as the Imperial army and the Guandong government. The city was heavily influenced by the initial plans drawn up by Russia, even though they remained largely unrealized, but when the Japanese empire took control in 1905 after its victory over Russia, it used the Russian plans as the basis of its own planning and construction efforts. David Tucker, an historian of modern Japan, points out that even at the beginning, city planning at Dairen played an important role in colonial administration and functioned to further SMR President Gotō Shimpei's mission of the "cultural invasion" of the city.³⁴ It was impossible to realize Gotō's "principles of modern imperial commercialism" fully, but with its wide, paved roads and Western-style architecture, Dairen became convincingly more modern than Japan itself.³⁵ The monumental city offered a glimpse of what the empire hoped Japan would become.

³³ Ibid., 159.

³⁴ Tucker, "Learning from Dairen, Learning from Shinkyō," 159, 165-167; Sorensen, *The Making of Urban Japan*, 109, 129. Goto Shimpei was one of the most influential figures in colonial Japan. A reformist, he was instrumental in initiating new city planning and social policies. He established the *Toshi kenkyū kai* (Urban Study Group) in 1917 as well as the *Toshi keikaku ka* (City Planning Section) of the Home Ministry and the *Toshi keikaku chōsakai* (City Planning Research Committee) in 1918. In addition to serving as president of the SMR Railway, he was also the Home Minister, president of the Imperial Capital Reconstruction Board, and mayor of Tokyo, among many other things.

³⁵ Tucker, "Learning from Dairen, Learning from Shinkyō," 168-169.

Japanese planners produced even more visionary plans for Shinkyō and Daidō. Shinkyō was even more of a blank slate than Dairen and was a part of the Japanese Empire's desire to increase military and material security. Japanese architects from Tokyo Imperial University (present-day Tokyo University), including Kishida Hideto and Sano Toshikata, who had helped to draft the Urban Buildings Law in 1919, drew up the master plan for Shinkyō, which was designated as a completely new capital city with the establishment of Manchukuo in 1932. This was city planning for economic development at its zenith. The master plan for the city was monumental, organized according to a grid system with clearly zoned blocks, generous open space, and wide boulevards. Planned for over a million people by the SMR and Capital Construction Bureau (CCB) without any local input, the new capital "would be the nation's administrative, economic, communication and cultural centre" complete with parks, residential areas, tree-lined boulevards, pedestrian zones, and industrial zones, and would be completely free from the unhygienic and disorderly past, planned.³⁶ Daidō (Datong), located 300 kilometers from Beijing, was equally ambitious and visionary. Some of Japan's most prominent architects and planners, including Uchida Yoshizō, Kishida Hideto, Uchida Yoshifumi (Uchida Yoshizō's son), and Takayama Eika from Tokyo Imperial University, participated in the design of Daidō in 1939, which was characterized again by large luxurious boulevards, open space, and *kinrin tani* (neighborhood units) arranged in a geometrical and monumental pattern. Seng Kuan, an historian of modern Japanese architecture, notes in "Land as an Architectural Idea in Modern Japan," that Uchida Yoshizō referenced the American garden suburb of Radburn in his plan for Daidō, maximizing land-use efficiency, utilizing cul-de-sacs, and organizing traffic flow in neighborhood units that were modeled after neighborhood plans for Detroit.³⁷ Such planning exercises carried out the colonies were highly academic and aimed to combine Western-style

³⁶ Tucker, "Learning from Dairen, Learning from Shinkyō," 165, 173-174; *Shinkyō toshi kensetsu keikaku yōto chūki haibun narabini jigyō daiichiji shikō kuikizu: shukushaku nimanbun no ichi* [map], 1932, 1:20,000, "American Memory," Library of Congress Geography and Map Division, Washington, D.C., accessed May, 2015, <http://hdl.loc.gov/loc.gmd/g7824cm.gct00267>.

³⁷ Seng Kuan, "Land as an Architectural Idea in Modern Japan," in *Architecturalized Asia: Mapping a Continent through History*, ed. Vimalin, H. Rujivacharakul, Hazel Hahn, Ken Tadashi Ōshima, and Peter Christensen (Honolulu: University of Hawaii Press, 2013), 192; Carola Hein, "Machi: Neighborhood and Small Town—The Foundation for Urban Transformation in Japan," *Journal of Urban History* 35, no.1 (11, 2008): 93.

techniques with local ones.³⁸ This also gave Japan's urban planners and architects a unique opportunity to test integrating Western practices with their own.

In addition to being fertile ground for Japanese planners to experiment with new planning techniques, the colonies also nurtured many of the important figures who would dominate urban planning in Japan after World War II. Sano Toshikata and Uchida Yoshizō, who had established the Rationalist School at Tokyo University in response to "Japan's appreciable need for earthquake-resistant and fireproof construction" in the early twentieth century, played a crucial role in shaping Japan's approach to urban planning through their own work and through their faculty positions at Tokyo University.³⁹ Furthermore, through the Dōjunkai Foundation, which supplied Japan's first public housing, Uchida would contribute to the design of a series of important housing prototypes with a team that included Kishida Hideto.⁴⁰ Takayama Eika, meanwhile, went on to found the first urban planning department at Tokyo University (formerly Tokyo Imperial University) in 1962, and later was instrumental in the planning of Senri New Town, where he once again used the neighborhood unit as the basic building block of the city. The close relationship between the academy and the government that was fostered through the work of figures like Uchida and Takayama continued even after the war, when universities like Tokyo University became heavily involved in the planning of postwar new towns. Uchida also founded the City Planning Institute of Japan (CPIJ) in 1951, which contributed to the foundational research for the development of Senri New Town and is today "the most authoritative body in the planning field" composed of academics, researchers, and bureaucrats.⁴¹ The institutional nature of city planning in postwar Japan, which revolved

³⁸ Hein, "Visionary Plans and Planners," 317.

³⁹ Kuan, "Land as an Architectural Idea in Modern Japan," 191. As Kuan has shown, the Rationalist School included many members of the Metabolist movement, including Tange Kenzō, Ōtaka Masato, and Maki Fumihiko. Many of these architects, planners, and thinkers would play a role not only in postwar urbanism but also in development of postwar new towns and public housing.

⁴⁰ Shigeru Satō, et. al. *Dōjunkai no apātomento to sono jidai* [Dojunkai Apartments and that Era], (Tokyo: Kajima shuppankai, 1998), 53. The design team for the modern apartment prototypes produced by the Dōjunkai Foundation in the 1920s and 1930s included Uchida Yoshizō, Kishida Hideto, Kawamoto Ryūichi, Nakamura Akira, Washizu Atsushi, and Tsuge Masao.

⁴¹ Ian Masser and Takahiro Yorisaki, "The Institutional Context of Japanese Planning: Professional Associations and Planning Education," in *Planning for Cities and Regions in Japan*, ed. Philip Shapira, Ian Masser, and David W. Edgington (Liverpool:

around the close relationship between the bureaucracy and academia, was rooted in the city planning practices and relationships of the early twentieth century.

The planning laws and practices established during the Meiji Period and Taishō Period (1912-1926) continued to frame the evolution of Japan's cities throughout the early twentieth century until revisions were introduced following the war. (Even then, these revisions did not introduce a major shift from the past, but rather built upon the earlier laws.) The first revision to the City Planning Law was enacted in 1940 to enable the purchase and designation of space for air defense and greenbelts. This was the product of growing interest in decentralist metropolitan planning that grew out of the 1924 Amsterdam International City Planning Conference. This interest was reflected in the Kantō Region Metropolitan Structure Plan proposed by the Home Ministry earlier that year that incorporated the garden city model, including greenbelts and satellite cities, and designated areas for industrial development, a reflection of the wartime need to safely disperse munitions production and air defense areas outside of the city.⁴² While decentralist ideas would no longer be necessary after the war from the perspective of safeguarding munitions, the idea of the greenbelt and satellite city would continue to linger throughout the early postwar period.

During World War II, planning power became even more concentrated in the hands of the central government than it had been in the early twentieth century; this was reinforced by a series of legislation in the late 1940s and 1950s that introduced new ways for the government to enact change in the city. World War II had left the nation in a state of disrepair, necessitating a large-scale reconstruction effort and refocusing the nation on economic growth. In 1948, the Ministry of Construction (MOC) took full control of urban planning on a national level and a hierarchical system of national, prefectural, and municipal levels was put in place, and in 1950, the Buildings Standard Act was passed, revising the 1919

Liverpool University Press, 1994), 117.

⁴² Sorensen, *The Making of Urban Japan*, 144-146.

city planning system to “encourage orderly city planning” through a new set of building regulations.⁴³ In 1954, the 1919 city planning system’s land readjustment regulations were consolidated into a new Land Readjustment Act that eased the national government’s ability to “subsidize local government initiated projects,” and enabled public housing agencies to pre-emptively purchase any lot that came to market in order to gain the necessary land holdings for large-scale housing estate and infrastructure development.⁴⁴ When the Ministry of Construction’s New Residential Town Development Act (New Town Act) followed in 1963, it took advantage of the Land Readjustment Act, promoting the construction of large-scale residential new towns by the Japan Housing Corporation (JHC), local housing agencies, and municipal governments across the nation in the following decades. By 1975, 188 new towns spanning more than 50,000 hectares were completed under this program.⁴⁵ A New City Planning Law was finally passed in 1968, replacing the early 1919 city planning system and further centralizing planning power in the hands of national bureaucrats at the expense of the individual municipalities. It did this by delegating planning responsibilities to municipal governments while dominating “legal controls, financial controls, and personnel transfers.”⁴⁶ The 1968 New City Planning Law, which aimed to control urban growth through the division of the city into two urban zones, the Urban Promotion Area and the Urban Control Area, remains in effect to this day.⁴⁷

In addition to prompting a revision of planning legislation, the destruction wrought by World War II encouraged a series of reconstruction plans for Japan’s capital city, Tokyo, that, although mostly

⁴³ Masser and Yorisaki, “The Institutional Context of Japanese Planning,” 115, and David W. Edgington, “Chronology of Major Urban and Regional Planning Legislation in Japan,” in *Planning for Cities and Regions in Japan*, ed. Philip Shapira, Ian Masser, and David W. Edgington (Liverpool: Liverpool University Press, 1994), 185.

⁴⁴ Sorensen, *The Making of Urban Japan*, 187. After its founding in 1955, the JHC was the primary recipient of this. Once it gathered 40% of land holdings required for a project, it could move forward with development.

⁴⁵ Sorensen, *The Making of Urban Japan*, 185-187; Toshihide Katayose, *Jikken toshi: senri nyūtaun wa ikani tsukurareta ka* [Experimental City: How Senri New Town was Built] (Tokyo: Shakai Shisōsha, 1981), 3.

⁴⁶ Watanabe, “Toshi keikaku vs machizukuri,” 46-47; Sorensen, *The Making of Urban Japan*, 214.

⁴⁷ Amati, *Urban Green Belts in the Twenty-first Century*, 27. The Urban Promotion Area was to be developed within the following ten years while the Urban Control Areas would be preserved from development. Exemptions to the law made preservation more difficult than hoped and the Preservation Open Spaces Act was passed in 1974 in aid in the preservation of agricultural land.

unrealized, created the theoretical framework for the development of Japan's postwar new towns. The central government also began to issue regional reconstruction plans in an effort to take advantage of the opportunity to reimagine the Japanese city. Under the 1945 *Sensaichi fukkō keikaku kihon hōshin* (Basic Policy for War-damaged Areas Reconstruction), the central government designated 115 cities for reconstruction, allocating ten percent of the land to parks and playgrounds, designating land for greenbelts and firebreaks, and building wide boulevards for automobile use. This was supported by the 1946 *Tokubetsu toshi keikaku hō* (Special City Planning Act), which “created the first system for preserving regional green space,” although pressures from landowners and suburbanization made attempts preserve a greenbelt largely ineffective.⁴⁸ At the same time, concern about the over-concentration of the city prompted renewed interest in decentralist policies while a fixation on economic growth prioritized the industrial in urban planning policy. In the 1950 *Shuto kensetsu hō* (National Capital Construction Law) and the 1951 Comprehensive National Land Development Act, planning efforts were focused on the city of Tokyo, and in 1946 the *Shutoken seibi hō* (National Capital Regional Development Law) followed, promoting decentralist policies for the city. By 1956 the National Capital Sphere Redevelopment Act was passed and in 1958 the first National Capital Region Development Plan (NCRDP) was released, marking Tokyo's second attempt to establish a greenbelt and series of new satellite towns around Tokyo—a scheme based on Ishikawa Hideaki's visionary 1946 plan for the reconstruction of Tokyo that shared strong parallels with contemporary plans in Europe, most notably Sir Patrick Abercrombie's Greater London Plan 1944. This plan was also not realized, again due to “fierce opposition from farmers and municipalities neighboring Tokyo,” as well as a lack of support from the central government, who in reality was more interested in centralist schemes that would bolster economic growth.⁴⁹ The placement of Tama New Town in the greenbelt after the passage of the 1963 New Town Act ironically helped to promote the greenbelt's demise. It was finally eliminated in favor of a suburban zone in 1968 with the

⁴⁸ Sorensen, *The Making of Urban Japan*, 159; Amati, *Urban Green Belts in the Twenty-first Century*, 24-25.

⁴⁹ Amati, *Urban Green Belts in the Twenty-first Century*, 25-26.

passage of the second NCRDP. On a national scale, the Comprehensive National Development Plans (CNDP) were passed in 1962, intensifying urbanization by designating fifteen New Industrial Cities in an attempt to encourage industrialization and balance national development. These plans were heavily focused on the development of industrial zones and supporting infrastructure—economic growth was the central government’s preoccupation at the time—but generally neglected the development of residential zones, civic space, or sewerage, perpetuating an ongoing housing crisis that developed during the war.⁵⁰ Interestingly enough, both the CNDPs and the NCRDPs served to further concentrate Japan’s urban areas rather than decentralize them, as they focused economic resources and industrial development in specific zones. Hein asserts that the reconstruction efforts made by the central government during the early postwar years were critical to establishing the “long term basis...for planning of most Japanese cities,” but did not produce any visionary outcome.⁵¹ While national reconstruction plans and new legislation ultimately did not, for the most part, alter the existing urban structure of Japanese cities in any imaginative or visionary way, they did pave the way for the development of large-scale housing projects, most notably new towns, that relied on laws like the 1954 Land Readjustment Act to move forward. In many ways, what the central government produced in the first fifteen years following World War II was a system of urban management that enabled them to produce prototypes of modern living through the postwar new towns.

When Japan broke ground on its first new town in 1961, it did so within a national planning framework that had been in development for nearly a century. Much of what this framework produced was pragmatic, not visionary, as Hein has clearly shown in her chapter “Visionary Plans and Planners: Japanese Traditions and Western Influences,” in *Japanese Capitals in Historical Perspective: Place, Power and Memory in Kyoto, Edo and Tokyo*. However, the postwar new towns that emerged from this context were as visionary of a symbol as the Chinese imperial city or the feudal castle town, reflecting

⁵⁰ Amati, *Urban Green Belts in the Twenty-first Century*, 26-27; Sorensen, *The Making of Urban Japan*, 180-182, 188-189.

⁵¹ Hein, “Visionary Plans and Planners,” 319.

and affirming the political and social aspirations of the state in built form. This would not have been possible without planning laws that enabled the purchase and development of large sites outside of the city, or without the expertise of the many planners and architects involved in the academic exercises held in the colonies. Japan's postwar new town project was intimately tied to the evolution of its own institutions of planning and architecture as they came into contact with Western thought throughout the twentieth century. As Japan began to develop its own city planning laws and implement urban reforms, it did so with the West as its benchmark. City planning as a design and legislative practice became a mechanism through which the new empire would attempt to reshape its own cities and appropriate the colonies to align with its vision of a hygienic and ordered empire. This was no less the case following the war when a disillusioned state sought to redefine itself in the wake of defeat. The wave of legislation and regional plans that grew out of the need to reconstruct Japan's largest cities continued to appropriate contemporary Western urban theory and practice to propose a new landscape for a democratic nation. While this ambition remained largely unrealized within the city itself, the new town offered a glimpse of what Japan hoped its cities could be. It is out of this context, both international and domestic, that Japan's postwar new towns grew. As a space where Japan's planners could produce large-scale suburban prototypes that blended Western planning theory with Japanese principles, values, and aspirations, the postwar new town embodied a vision of what the nation hoped to become: healthy, modern, and democratic.

Chapter 3: Origins of the Postwar New Town Movement

As Japan sought to reimagine its urban landscape and national identity in the aftermath of World War II, it turned to contemporary Western planning practice for a model of healthy, modern, and democratic cities, joining the postwar new town movement in the 1960s. The postwar new town movement built on the theories of great thinkers like Ebenezer Howard, Clarence Perry, and the International Congress of Modern Architecture (CIAM), an organization of the world's leading architects and planners founded in 1928, situating the new town as a central component of regional planning in the aftermath of World War II. Howard's archetypal garden city supplanted the industrial city with a network of self-contained and collectively-owned cities that would offer the best of both the town and the country.¹ The influence of the garden city was widespread and by the early twentieth century it was reconstructed into garden suburbs in the United States and Japan, where planners explored the potential of the verdant residential environment while leaving Howard's collectivist vision behind. As Japanese garden suburbs became a suburban prototype that satiated a national nostalgia for the rapidly diminishing rural landscape, the American garden suburbs, like Radburn, infused the movement with new theories that placed the family at the center of the community and made Clarence Perry's neighborhood unit the building block of society.² At the same time, satellite towns—the privately developed predecessor of the state-initiated post war new town—carried decentralist ideas forward and laid the groundwork for postwar reconstruction plans, most

¹ Pierre Merlin, "New Town Movement in Europe," *Annals of the American Academy of Political and Social Science* 451, (09, 1980): 77, accessed January 27, 2015, <http://www.jstor.org/stable/1043162>; Stephen V. Ward, "The Garden City Introduced," in *The Garden City: Past, Present, and Future*, ed. Stephen V. Ward (London: E & FN Spon. 1992), 4, 10.

² Jordan Sand, *House and Home in Modern Japan: Architecture, Domestic Space and Bourgeois Culture 1880-1930* (Cambridge, Mass: Harvard University Press, 2003), 148-149; Carol A. Christensen, *The American Garden City and the New Towns Movement* (Ann Arbor, Mich: UMI Research Press, 1986), 60.

notably the *Greater London Plan 1944* that proposed the reorganization of the city to include suburban zones, a greenbelt, and satellite towns. As postwar new towns began to emerge to meet the state's need to address both the intense urbanization of the city's core and rapid suburbanization of its fringe, CIAM shifted its focus to a synthetic, rather than scientific, approach to urban planning that placed the human being at the center of an urban environment characterized by neighborhood units, pedestrian pathways, and civic centers.³ Indebted to Howard's vision of the archetypal garden city, new towns expanded in scale and scope to meet the needs of the postwar state, folding in the civic centers of CIAM and the neighborhood units of American garden suburbs to offer an idyllic living environment conveniently removed from the disparaged industrial city.

The Origins of the Garden City Movement and the “Neighborhood Unit”

Since its genesis, the industrial city has prompted considerable debate about the nature of cities and how they should be developed, a challenge addressed by many urban theories including the “Garden City,” which was an important predecessor of the early twentieth century satellite town and the postwar new town. Ebenezer Howard (1850-1928), a British clerk for the Houses of Parliament, published *Tomorrow: a Peaceful Path to Real Reform* in 1898 (reissued as *Garden Cities of Tomorrow* in 1902), proposing a new model of urbanization that would alleviate society of the ills of industrialization: the “garden city.” To mitigate the conditions of the industrial city, Howard would replace it with a network of 30,000-people garden cities and 58,000-people central cities to form what he called the “social city.”⁴ Howard imagined that the garden city would function as an “urban technology” that would relieve Britain's large industrial cities of the insurmountable pressures of urbanization, pollution, and poor hygiene, offering citizens the best of both the town and the country. He had no qualms with technology or industrialization, and, in fact, was an avid supporter of technological and industrial innovation, but at the same time he was

³ Eric Paul Mumford, *Defining Urban Design: CIAM Architects and the Formation of a Discipline, 1937-69* (New Haven: Yale University Press, 2009), 81, 95.

⁴ Merlin, “New Town Movement in Europe,” 4, 10.

deeply concerned with unhygienic and polluted conditions of industrial city. While later his vision would be diluted to a merely esthetic model, Howard imagined a garden city that would itself be a technology, managing industrialization through decentralization while providing a healthful, hygienic, and socially sustainable urban environment to its citizens. For him, the garden city would not be a “pristine untouched state of nature” (as many people would later interpret it), but rather a means of modulating the chaos of the city with the countryside through planned urban settlements.⁵ This would be done by allowing the residents of the garden city to collectively-own and co-operatively manage the garden city, thereby increasing land value in service of the community’s need and the common good. Surrounded by a commonly owned greenbelt and fed with produce from adjacent farmland, the 2,430-hectare garden city would be both physically and socially independent from the central city, with its own “industry, employment, commerce, culture, education, social life, and even agriculture.”⁶ Residents would need to walk no more than 550 meters to meet their daily needs at neighboring shops and institutions that support six wards of 5,000 people each, while a town center and park would anchor the center of the community. Equality, rationality, and social harmony would define this utopian community.⁷ Rooted in a utopian dream of social reform, Howard’s proposal became one of the most influential visions of the modern city in the twentieth century, referenced not only by the garden city movement to which it gave birth, but also by American and Japanese garden suburbs, the International Congresses of Modern Architecture (CIAM), and later by the postwar new town movement.

Howard’s proposal for the garden city remains an archetype to this day, but many attempts have been made throughout the twentieth century to realize his vision or variations of it. Howard first put his theories into practice with the help of Raymond Unwin and Barry Parker with the development of two

⁵ Christensen, *The American Garden City and the New Towns Movement*, 7, 46-48.

⁶ Ward, “The Garden City Introduced,” 2; Christensen, *The American Garden City and the New Towns Movement*, 48.

⁷ Kirsten Spliid Pedersen, “Eleven New Towns: An Historical Comparative Study of The Structure and the Morphology of the New Towns and Their Subdivisions” (PhD diss., Washington University in St. Louis, 1981), 115-118; Christensen, *The American Garden City and the New Towns Movement*, 47. Howard’s proposal was quite diagrammatic. He proposed a radial plan with six wards delineated by a series of avenues that converged at a town center.

pioneering projects—Letchworth (1903) and Welwyn (1922). To establish its municipal independence, Howard’s “First Garden City Company Limited” purchased the entire 1,821-hectare site for Letchworth located 56 kilometers north of London, but the project departed from the communal land ownership model of the garden city archetype with an infusion of private capital from “influential business and professional interests,” setting an enduring paternalistic direction in the garden city movement.⁸ Instead, it was the environmental qualities of the garden city that were actualized. In an almost diagrammatic way, radial avenues converged at the town center, delineating neighborhood blocks of single-family homes and directing residents towards the rail station while a greenbelt surrounded the city to reinforce a bucolic atmosphere. Letchworth’s independence was supported by industrial and commercial blocks placed alongside residential blocks, giving residents access to daily amenities. Welwyn reinforced this emphasis on the quality of the residential environment through its luxurious landscape and even more magnificent town center located 32 kilometers north of London. According to Pierre Merlin, a French researcher and professor, Welwyn’s town center exerted a more powerful organizing presence than in Letchworth by concentrating the shopping center, schools, libraries, a museum, and other cultural amenities around the rail station.⁹ Covering 2,381 hectares, Welwyn housed 40,000 people in its residential blocks, which were outlined by meandering avenues and permeated only by cul-de-sacs. Meanwhile, ample open space, such as “parks, sports and recreation ground, and children’s playgrounds” offered space for leisure and health along the periphery of the garden city near its agricultural belt.¹⁰ Prized for their “marvelous landscapes” and idyllic living environments, Letchworth and Welwyn hinted at the direction the garden city movement would later take.¹¹ While Howard’s archetypal garden city symbolized a social vision as much as an architectural or environmental one, the garden city was

⁸ Ward, “The Garden City Introduced,” 5.

⁹ Merlin, “New Town Movement in Europe,” 77-78.

¹⁰ Pedersen, “Eleven New Towns,” 120-125.

¹¹ Merlin, “New Town Movement in Europe,” 78.

interpreted in other contexts, most notably in the United States and Japan, the emphasis shifted from the communal urban structure to the quality of the residential environment.

Howard's ideas first reached Japan in 1907 through the *Tokyo Nichi Nichi*'s article, "Hanazono Toshi" (Floral Garden City), and the Ministry of Internal Affairs' publication entitled *Denen-toshi* (Garden City) produced that same year.¹² By the turn of the century, Japan's rapidly expanding cities, particularly Osaka and Tokyo, faced similar challenges as their European counterparts, making garden cities appealing to the emerging bourgeois in the early twentieth century. Several publications on the garden city followed, including a 1912 paper by Ōsawa Sannosuke detailing Hampstead Garden Suburb, but articles and publications at the time avoided any of the socioeconomic principles implicit in Howard's proposal (such as the idea of communal land ownership) and focused instead on the environmental qualities of the garden city, which were reconfigured as a "garden suburb" in the Japanese context.¹³ In his book *International Architecture in Interwar Japan: Constructing Kokusai Kenchiku*, architectural historian Ken Tadashi Ōshima illustrates that Japan's early flirtation with the garden city represented a search for a model for urban expansion at a time when "dense settlement and modern industrialization rapidly eroded [Japan's] verdant landscape."¹⁴ The garden city appealed to the Japanese bourgeois planners and bureaucrats not for its independence from the central city, but for its symbolic escape from the polluted and overcrowded industrial city. Conveniently accessible by rail, but distant enough from the city, the Japanese garden suburb was a seductive symbol of the "pastoral ideal."¹⁵

Japan's fascination with the garden suburb stemmed from deeper questions about national identity reflected within the landscape and the home, a theme later echoed in postwar new towns, which also

¹² Ken Tadashi Ōshima, "Denenchōfu: Building the Garden City in Japan," *Journal of the Society of Architectural Historians* 55, no.2 (06, 1996): 141, accessed December 12, 2014, <http://www.jstor.org/stable/991116>.

¹³ Ward, "The Garden City Introduced," 74. Other publications included *Denyū shi* [Vegetable City] by Chūjō Seiichirō in 1909, and *Denen-shigai* [Country City] and *Shin denen-shi* [Newly Developed City] published in the *Journal of the Institute of Japanese Architects* in 1910.

¹⁴ Ken Tadashi Ōshima, *International Architecture in Interwar Japan: Constructing Kokusai kenchiku* (Seattle: University of Washington Press, 2009), 178.

¹⁵ Ōshima, "Denenchōfu: Building the Garden City in Japan," 141.

sought to foster a garden-city atmosphere. As Jordan Sand, a professor of Japanese history at Georgetown University, has shown in *House and Home in Modern Japan: Architecture, Domestic Space and Bourgeois Culture 1880-1930*, the work of 1930s folklorist Yanagita Kunio was emblematic of the tensions that surrounded domesticity in the early 20th century. Yanagita believed that the bourgeois dwelling had diverged into the traditional (represented by the timeless farmhouse) and the commodified (represented by the rented urban tenement), causing a rise of individualism and dissolution of domestic community as the dwelling abandoned the traditionally patriarchal reception room in favor of more Western styles.¹⁶ This nostalgia for the rural dwelling paralleled one for the rural landscape, which was seen as moral and hygienic alternative to the smoky industrial city. There was strong romanticization of the rural landscape for the first time, which was seen to represent the “simple life” of the gentlemen farmer, which Sand noted was “neither peasant in straw sandals nor businessman in a Western suit—[but] was an eclectic invention much like the new suburbs themselves.”¹⁷ *Denen-toshi* and other contemporary publications played off this nostalgia and reinforced an emerging romanticization of the countryside. In a way, the “garden” of the garden suburb was a brand sold by large rail companies and developers that represented a particular lifestyle favored by the bourgeois as they sought to define for themselves a new national identity.¹⁸

What intrigued Japan was not the theoretical framework of the garden city, but rather the urban planning techniques that incorporated nature into the city.¹⁹ Japan began to apply Western urban theories to practice quite early in the twentieth century, albeit on a small scale, and *Denenchōfu*, its first garden suburb, was begun in 1918. Shibusawa Eiichi (1840-1931), a Japanese industrialist and developer who

¹⁶ Sand, *House and Home in Modern Japan*, 31-32, 47, 356.

¹⁷ *Ibid.*, 149.

¹⁸ *Ibid.*, 148-149, 218-220, 234. There was considerable anxiety about national identity during the early twentieth century, as Western-style clothing, architecture, and products challenged Japan to define its own national consciousness within an international context. The “culture life,” as Sand pointed out, became a subject of debate as it simultaneously represented Japan’s progress and its colonization by Western culture.

¹⁹ Shun-ichi Watanabe, “The Japanese Garden City,” in *The Garden city: past, present, and future*, ed. Ward, Stephen V. (London: E & FN Spon. 1992), 83-84.

was familiar with Howard's ideas and was "particularly inspired by [his] description of the balance between town and country," ran the project for the *Denen-toshi kabushiki-gaisha* (Garden City Corporation). The Corporation sited Denenchōfu less than thirty minutes from central Tokyo near the Tama River on once agricultural land now slated for suburban rail development.²⁰ Although Japanese planners admired the "garden" part of the garden city, they were skeptical of its three basic principles: a small size, independence from the central city, and "betterment shared co-operatively," and instead developed the 157-hectare site privately and eventually sold the lots to its residents, rather than leasing them.²¹ Because of this, the project only benefitted middle-class residents who could afford to purchase a home in a new commuter suburb and who reflected the bourgeois social structure of 1920s Japan.²² Denenchōfu relied wholly on Tokyo for work, leisure, and culture, despite its population of nearly 30,000. Tree-lined avenues and concentric roads divided the garden suburb into highly geometrical residential blocks—a rather literal interpretation of Howard's diagram—converging at a central park, small shops and Western-style rail station that served as both a physical and psychological link back to Tokyo. In a bid to ensure the integrity of the *denen toshi* (garden city) atmosphere and high quality of life attributed to the project, the Corporation also set a series of guidelines that included esthetic and height restrictions, a land/area ratio of no more than 50%, required setbacks, and dwelling cost minimums to ensure a high quality of design. The result was a suburban neighborhood luxuriously ornamented with trees and generous yards that created an exotic and eclectic atmosphere unprecedented in Japan. The project proved to be quite successful, and today Denenchōfu is a neighborhood reserved for the elite, where "the founder's idealistic social concerns [have been transformed] into purely capitalist ones."²³ It was an iconic example of the Japanese garden suburb that interpreted Howard's theories and redirected them towards the nation's own desire to fold nature into the city.

²⁰ Ōshima, "Denenchōfu: Building the Garden City in Japan," 142-144.

²¹ Watanabe, "The Japanese Garden City," 83.

²² Shibusawa harbored intentions that reflected "Howard's social spirit and civic activism," investing in the project himself.

²³ Ōshima, "Denenchōfu: Building the Garden City in Japan," 142-143, 145-147, 150.

As a garden suburb, Denenchōfu was as much about defining an emerging bourgeois lifestyle as Howard's garden city was about engendering a more egalitarian community. Watanabe Shun-ichi, an urban planning professor at the Science University of Tokyo, points out that for the Japanese, the word *denen*, used to describe the "garden" in garden city, invoked a potent sense of "nostalgia for the countryside" rather than an image of urban or suburban gardens in the Western sense.²⁴ In "Landscape of Contradictions: The Bourgeois Mind and the Colonization of Tokyo's Suburbs," Sand further suggests that the mental landscape of the suburbs was just as important as the physical one in the early twentieth century. Indeed, there is certainly evidence of this in the Japanese garden suburb. Using the bourgeois writer Roka (Tokutomi Kenji-rō) as his case study, Sand illustrates the tension between the poetics of an imagined rural life and the colonization of the pastoral landscape by the city, most notably through the expansion of the railways. Roka was at once disturbed by the rail companies, who partook in "this state-led industrial exploitation of the Masashi Plain," and simultaneously, as a "privileged interloper," complicit in the colonization of rural Japan by the bourgeois suburbs.²⁵ He represented an imagined "middle-class identity with a strongly individualist ethic" that grew out of a void left by the collapse of the Tokugawa social structure and that became fixated on the reform of society, the family, and the self.²⁶ The verdant environment of the suburbs fed both the urban desires and pastoral fantasies that haunted the bourgeois intellectual at the time. Sand describes this tenuous relationship:

For the intellectual who has made settling outside the city part of a moral mission, the suburban retreat was a way to bring the interior, private person to the surface, into visibility – and so much the better if others noticed. In the traffic of city living, crafted personal facades could be accepted for the person; no one asked in public 'is this the real man?' The conspicuous move away from the city, braving inconvenience and isolation for reflection on primitive nature, both external and internal, was a move toward

²⁴ Watanabe, "The Japanese Garden City," 69.

²⁵ Jordan Sand, "Landscape of Contradictions: The Bourgeois Mind and the Colonization of Tokyo's Suburbs," *Japanese Studies* 29, no. 2 (2009): 173, 176, doi: 10.1080/10371390902893044.

²⁶ *Ibid.*, 178.

exposure, not toward privacy. And with this exposure came the gratification of confirming one's moral difference from the unconscious masses.²⁷

Sand's argument clarifies why the production of a spacious and verdant landscape that would serve as a playground for the insecure bourgeois male was far more seductive than Howard's social mission of reforming mass society through the fabric of the garden city. The social climate of early twentieth-century Japan added a new psychological dimension to suburbanization that reflected a need for physical, social, and psychological domains unmarked by the feudal system the nation had left behind fifty years earlier.

American planners appropriated the garden city in similar ways as the Japanese and a parallel practice of garden suburbs developed that combined the qualities of the garden city's residential environment with contemporary urban theories while leaving the socioeconomic aspects of Howard's proposal behind. American garden suburbs introduced new principles to the garden city movement, most notably the neighborhood unit, that were incorporated into postwar new towns. Radburn, NJ, a garden suburb 25 kilometers from New York City designed by Clarence Stein and Henry Wright in 1928, was the quintessential example of the American garden suburb. The RPAA (Regional Planning Association of America) and City Housing Corporation developed Radburn to test out Howard's theories, but they also introduced Clarence Perry's "neighborhood unit" and Sir Patrick Geddes' regionalist theories into the project.²⁸ Radburn introduced a number of principles that defined the garden suburb typology. The "Radburn Idea" consisted of five key principles: "(1) the superblock (of 12-20 hectares each); (2) specialized roads; (3) separation of pedestrian and automobile traffic; (4) houses turned to front the park; and (5) the park as the backbone of the neighborhood."²⁹ The superblock, defined by arterial roads and

²⁷ Ibid., 189.

²⁸ Ward, "The Garden City Introduced," 10-11, 130; John Scott and R. J. Bromley, *Envisioning Sociology: Victor Branford, Patrick Geddes, and the Quest for Social Reconstruction* (Albany: State University of New York Press, 2013, *eBook Collection (EBSCOhost)*, EBSCOhost, accessed April 20, 2015), 109. The City Housing Corporation, founded by Manhattan real-estate developer Alexander Bing, also developed the Sunnyside Gardens in a joint venture with the RPAA in 1924.

²⁹ Christiansen, *The American Garden City and the New Towns Movement*, 60.

penetrated only by cul-de-sacs, allowed the single-family dwellings to turn inward towards the park, creating a semi-private communal zone safe from the vehicular traffic. This scheme reflected a lifestyle of recreation and leisure and, through the provision of an elementary school in each neighborhood unit, “determined the *social* limits of the city” through the scale of the young child. The principle of orienting the community around the school was based on the socio-psychological philosophies of Charles H. Cooley, who emphasized the importance of the family and procreation, and Perry’s “neighborhood unit” theory that designated the elementary school as “the central building block of communities.”³⁰ Essentially, the family became the building block of the society, a premise that contained strong moral overtones and drew parallels with French theorist and social reformer Frédéric Le Play (1806-1882), who posited that the working class family occupied a central role in society as a fundamental building block, necessitating its moral reform for social development.³¹ The “Radburn Idea” presumed a standardized family along similar lines and was designed to accommodate an idealized lifestyle within a relatively homogenous, and therefore “conflict-free” and “stable” environment. In doing so, Radburn demanded a predictable and singular demographic rooted in a conservative vision of the idealized family. Only portions of the project were ever even completed, as the Great Depression in 1929 paralyzed its development and limited it to only a few neighborhoods. Nevertheless, Radburn, a middle-class suburb of roughly 25,000 people, became a model for private suburban development in the United States, much like Denenchōfu did in Japan.³²

Radburn had an enormous impact on suburban development in the United States, as well as in Japan where it would become an important precedent for postwar new towns, and was followed by a number of other iconic garden suburb projects. The Greenbelt Program, a series of garden suburbs developed by Columbia University professor Rexford Guy Tugwell to spur economic recovery as a part of the 1935

³⁰ Ward, “The Garden City Introduced,” 12; Christiansen, *The American Garden City and the New Towns Movement*, 60-65.

³¹ Paul Rabinow, *French Modern: Norms and Forms of the Social Environment* (Cambridge, Mass: MIT Press, 1989), 86-92.

³² Christiansen, *The American Garden City and the New Towns Movement*, 58, 65-66.

ERAA (Emergency Relief Appropriation Act) and offer reasonable living conditions and community life to lower income residents, elaborated on the principles developed in Radburn.³³ In the Greenbelt Towns built for the project, each neighborhood unit was organized around open space and given its own center, while libraries, swimming pools, a large shopping center were shared by a group of neighborhood units to provide access to civic, commercial, and public institutions, although no provisions were made for industry. A surrounding greenbelt, designed to anchor the daily lives of residents, further distinguished the garden suburb from the city and created space for recreation and leisure.³⁴ In the decade immediately following World War II, Levitt & Sons pushed the “Radburn Idea” even further in a series of iconic garden suburbs, all called Levittown, in New York, Pennsylvania, and New Jersey. Levittown, NY began construction in 1947 as the first mass-produced suburb in the United States, quickly reaching a population of 60,000 people; it was followed by Levittown, PA in 1951. The Levittowns also used the neighborhood unit as its fundamental building block to provide space for commerce, industry, and recreation within a verdant residential environment. Levittown, NJ began in 1958 and was the first to be inaugurated as its own municipality, as Howard had envisioned.³⁵ Following earlier garden suburb patterns, Levitt & Sons divided the suburb into twelve neighborhood “parks” organized around elementary schools and placed shopping centers at the edge of the town while segregating traffic through the use of peripheral roads and cul-de-sacs. Each neighborhood park contained 1,200 homes each and was marketed towards young, middle-class families. A greater range of housing types dissolved the architectural homogeneity of Radburn or the Greenbelt Towns, despite the fact that the homes were mass-produced and based off a standardized floor plan. However, the Levittowns were also notorious for contributing to racial tensions by targeting a limited demographic and discriminating against minorities.³⁶ This was in large part

³³ Ibid., 88-89. Although intended for lower-income household rather than middle-income households, strict income regulations excluded many poor families, such as those with working wives.

³⁴ Ibid., 83-87, 92.

³⁵ An important distinction between the garden city and the Levittowns is that the latter was developed privately and sold to residents, not collectively owned.

³⁶ Ibid., 95-96, 102-103.

because American garden suburbs were private, for-profit development projects, not collectively-owned independent cities driven by a greater social mission. Instead, they fostered an atmosphere of conservative social reform that sought to define a new domesticity for the working class.

The American and Japanese garden suburbs pushed the garden city movement in directions that later heavily influenced the principles behind the postwar new town by shifting the focus of the garden city from urban reform onto the quality of the residential environment. In Japan, this shift occurred with the transmission of ideas from the West through publications like *Denen-toshi* that emphasized the incorporation of nature into the city, as Ōshima has shown. This (mis)interpretation of the garden city by the Japanese was paralleled by a similar focus in American garden suburbs like Radburn, and even in garden suburbs like Hampstead Garden Suburb (1906), a privately built project developed by Mrs. S.A. Barnett and designed by Raymond Unwin in England.³⁷ The quality of the environment and the architecture at Hampstead Garden Suburb was made a priority, as it was in American and Japanese garden suburbs. This focus was intensified with the introduction of the “neighborhood unit” at Radburn, which oriented the suburban community around an increasingly idealized middle-class family who was placed at the center of the community within a luxuriously manicured landscape. These ideals would later re-emerge in postwar Japanese new towns, which returned to the “neighborhood unit” as the building block of the town. Hein argues in “Machi: Neighborhood and Small Town—The Foundation for Urban Transformation in Japan,” that the neighborhood unit fit well with Japan’s more traditional urban structure, which she characterizes as a patchwork of *machi*, which means “neighborhood” or “small town” in Japanese.³⁸ Radburn’s neighborhood unit appealed to postwar Japanese urban planners for a multitude of reasons, particularly its function as a fundamental unit of community building, as Hein has

³⁷ Ward, “The Garden City Introduced,” 8; “The Hampstead Garden Suburb,” *The British Medical Journal* 1, no. 2359 (1906): 639, accessed June, 2015, <http://www.jstor.org.libproxy.wustl.edu/stable/20288963>. Mrs. S. A. Barnett purchased 320 acres of land outside of London to develop as a garden suburb in order to prevent the “eyesore” of speculative real estate from destroying the bucolic landscape that surrounded the city. Hampstead Garden suburb made a greater effort than American garden suburbs to accommodate different social classes, particularly the working classes, who would also be able to own lots.

³⁸ Hein, “Machi: Neighborhood and Small Town,” 75.

shown. The neighborhood unit also had a psychological appeal. Developing in tandem to Japan's own garden suburbs, the neighborhood unit of the American garden suburbs evoked a similar sense of nostalgia for the countryside through its careful consideration of open space and landscape.

Postwar Reconstruction and the Development of New Towns

Although the neighborhood unit became a fundamental component of the postwar Japanese new town, there was considerable evolution between the garden cities and garden suburbs of the early twentieth century and the new town of the 1950s and 1960s. Planning and public policy historian Stephen V. Ward points to the "satellite town," which appeared at the same time as the garden suburb, as the principle intermediary between the garden city and postwar new town. Satellite towns emerged as early as 1910 and developed during the interwar period. Like garden suburbs, they were "superficially" similar to garden cities and included greenbelts, but presumed the continued existence of the industrial city, rather than its replacement, as Howard had proposed; but they were not suburban communities dependent on a central city for their economic survival. In the wake of problematic suburbanization as industrial cities continued to swell, secondary self-contained satellite towns would absorb the "overspill" in a managed way. These decentralist ideas were explored through the work of planners and architects like Ernst May in Frankfurt, and Raymond Unwin and Sir Patrick Abercrombie in London. As a socially, economically, and physically self-contained city the satellite town was the predecessor to the postwar new town, which was first defined when the nation-state began to take a direct role in their development.³⁹

The postwar new town, which was a product of state-initiated urban planning, evolved from early satellite cities to include new urban elements that would enable the state to address regional needs, most notably housing, such as the "civic center" and neighborhood unit. The work of the International Congresses of Modern Architecture (CIAM) is important to consider, as its theories helped to refine the objectives and urban forms used in many postwar new towns, particularly in Scandinavia and Japan. Seeking to

³⁹ Ward, "The Garden City Introduced," 9-13.

reorganize the industrial city along socialist and functionalist lines, CIAM made many significant contributions to the fields of architecture and urban planning in the twentieth century.⁴⁰ One of the most important for the Japanese postwar new town was Ernst May's concept of the *Existenzminimum* (Minimum Dwelling) presented at CIAM 2 in 1929, which focused on the dwelling of the masses. By the 1920s, Japan was already beginning to explore issues of public housing through the work of the Dōjunkai Foundation (discussed in *Chapter 4*). The ideas of the CIAM 2 conference, which posited that the minimum dwelling would be the most fundamental component of the modern city, were likely transmitted through a lecture given in July of 1930 by Yamada Mamoru, who is widely considered to be the cofounder of Japan's first Modern Movement.⁴¹ Because the ideas surrounding the *Existenzminimum* focused on improving living conditions through the rational design of dwellings, infrastructure, and the environment, they would have been very appealing to Japanese architects who were interested in introducing new architectural and urban technology to make cities more resilient in the wake of earthquakes and fires.⁴² CIAM also situated the *Existenzminimum* within the larger urban context of the modern industrial city, which would be rationally and systematically designed to "improve the living conditions of the majority of the population, to increase economic efficiency through transportation improvements, and to protect the natural environment as a place for mass recreation."⁴³ Architectural historian Eric Mumford observes in *Defining Urban Design: CIAM Architects and the Formation of a Discipline, 1937-69*, that CIAM hoped that design rooted in a scientific investigation of the "'four functions' of dwelling, work, transportation, and recreation," would transform the industrial city itself into a more habitable, communal, and rational landscape.⁴⁴ An iconic example of this thinking was Le Corbusier's "Contemporary City for Three Million," first published in 1922 and then later republished in

⁴⁰ Mumford, *Defining Urban Design*, 2.

⁴¹ Mumford, *Defining Urban Design*, 3; Ōshima, *International Architecture in Interwar Japan*, 63.

⁴² The Great Kantō Earthquake leveled large portions of Tokyo in 1924, prompting interest in new housing technologies that would prove to be more resilient in the future.

⁴³ Mumford, *Defining Urban Design*, 3.

⁴⁴ *Ibid.*, 7.

Urbanisme in 1925. He rigorously addressed issues of social structure, density, and traffic, replacing the existing city with superblocks, high-rise apartment dwellings, and a hierarchy of traffic speeds.⁴⁵ These ideas later proved to be important for Japanese postwar new towns, as well as Scandinavian ones, as these nations departed from the low-rise single-family housing stock of the garden cities and British new satellite towns in favor of high-density housing that would maintain high populations while still reserving enough open space to give the postwar new town a garden-city atmosphere.

CIAM made another significant contribution to urban planning theory at its 1951 CIAM 8 congress in Hoddeson England that would be applied in postwar new towns. Many prominent architects from around the world attended this congress, including Josep Lluís Sert (1902-1983), Le Corbusier (1887-1965), Maekawa Kunio (1905-1986), and Tange Kenzō (1913-2005).⁴⁶ It was documented in a 1952 publication titled “Heart of the City,” a theme Mumford has shown is indebted to thinking of members like Sert, Ernesto Rogers, and English MARS (Modern Architectural Research) group. The “heart of the city” was largely a new principle of CIAM urbanism. CIAM 8 marked a shift towards the “civic center and pedestrian urban life” in urban planning theory in favor of a synthetic approach to urbanism that drew on the garden city movement, as well as on other modernist city planning principles, particularly Le Corbusier’s. The “civic center” refined the town center of Howard’s garden city by focusing on the experience of the pedestrian and his role in civic life. It also departed from earlier auto-centric designs, privileging pedestrianized civic centers that would become the “centers of community life.”⁴⁷ Sert, inspired to bring people together through a “network of [urban] cores,” hoped to foster civic life and social engagement in the city through planning, making it a “built space, a place where a ‘sense of

⁴⁵ Ibid., 4.

⁴⁶ J. Tyrwhitt, J. L. Sert, and E. N. Rogers editors, *The Heart of the City: Towards the Humanisation of Urban Life Congrès Internationaux d’Architecture Moderne: CIAM 8* (London: Lund Humphries, 1952), 36-40.

⁴⁷ Mumford, *Defining Urban Design*, 59, 81-85, 95; Tyrwhitt, Sert, and Rogers editors, *The Heart of the City*, 3, 16. Rogers at the time was working to develop “approaches to urban ‘context,’” while the MARS group, who had proposed a plan for London in 1942, organized the “The Heart of the City” CIAM 8 conference in 1951.

community' is physically expressed."⁴⁸ Conversations at the conference—to which Maekawa notably contributed—particularly revolved around the attributes, placement, and function of the “Core,” or “heart of the city.”⁴⁹ The focus on the human environment at the CIAM 8 conference, dovetailed nicely with emphasis on a garden city-like residential environment, making its ideas appealing to many architects in Scandinavia and Japan who were later involved with the planning of postwar new towns.

The emergence of the postwar new town was also rooted in a very real need on the part of the state to address the conditions, and in many cases the reconstruction, of the central city following World War II. The war had left many cities across Europe and Japan completely devastated, prompting interest in planned decentralization as nations searched for ways to rebuild. Central governments employed three main strategies to aid in urban reconstruction and decentralization: housing estates, town extensions, and new towns.⁵⁰ The postwar new town emerged as a critical component of regional planning that supplemented the primary city, rather than replaced it, and owed much to Unwin's reports on London issued from 1929 to 1933. A descendent of the satellite town, the postwar new town became a government-initiated project to manage the development of regions around large central cities. One of the earliest and most influential regional plans calling for the construction of new towns was *The Greater London Plan 1944* overseen by Sir Patrick Abercrombie, which evolved out of policies established during the war that aimed to decentralize the population and industry. It would achieve this through the construction of eight “new satellite towns” located 32-49 kilometers outside of London.⁵¹ The central government began development of the new towns in 1946 with the passage of the New Towns Act, which

⁴⁸ Mumford, *Defining Urban Design*, 95; Eric Paul Mumford, *The CIAM Discourse on Urbanism, 1928-1960*, (Cambridge, Mass: MIT Press, 2000), 203.

⁴⁹ Tyrwhitt, Sert, and Rogers editors, *The Heart of the City*, 36-40.

⁵⁰ Pierre Merlin, *New Towns: Regional Planning and Development*, (London: Methuen, 1971), 3.

⁵¹ Ward, “The Garden City Introduced,” 13-15; Merlin, *New Towns: Regional Planning and Development*, 11-13. As Chief Adviser to the Greater London Regional Planning Committee, Unwin proposed satellite towns around London in a series of reports produced from 1929 to 1933. The scheme called for the decentralization of industry and residential units, organized into three rings around London: self-contained suburbs at the fringe of the city, self-contained satellite towns twelve miles from the city, and “independent industrial gardens” twelve to twenty-five miles from the city. The additional new towns were constructed in the northeast of England, “central lowlands of Scotland,” near Cardiff, and one at a distance from any large town.

stipulated that the “new towns were to be state directed” through an appointed government committee, rather than privately funded or communally held. Abercrombie’s plan called for high population densities (185-250 people per hectare) in the central built-up area of London, surrounded by a ring of low-rise suburbs (125 people per hectare) and an agricultural greenbelt, as defined by the Green Belt Act of 1938. A ring of self-contained new towns of 60,000 to 80,000 people, including Basildon, Crawley, and Hemel Hempstead, was built beyond the greenbelt to absorb excess population from the city; each covered roughly 4,400 hectares with a density of only 30 people per hectare. Although connected to London primarily for employment, the new towns were largely self-contained. Commercial centers anchored the industrial blocks and residential sectors of 4,000 to 12,000 people, which were also outfitted with secondary shopping centers, green spaces and other amenities meant to meet the needs of daily life.⁵² The new town was now an “urban technology” of the state. While Howard had sought to liberate the citizen from the chaos of the industrial city by replacing it with a fabric of garden cities scaled to optimize the qualities of both the town and the country, the focus shifted in the postwar period to the mass provision of housing within a high quality residential environment and the management of haphazard suburban sprawl. As cities rapidly grew larger, the war had made decentralization desirable and new towns—no longer the icons of social harmony—became a technology through which central governments could reconstruct and supplement the city.

The Greater London Plan 1944 quickly became a model for other cities in Europe and Japan. Sweden and Finland are two examples of nations whose regional plans (1952 and 1960, respectively) also included a scheme for new towns.⁵³ Similarly concerned with the consequences of haphazard suburban development, they saw a need to structure suburbanization through the state. The city of Stockholm structured its 1952 regional plan around a new subway system called the Tunnelban, along which a series

⁵² Merlin, *New Towns: Regional Planning and Development*, 5-6, 13-21; Merlin, “New Town Movement in Europe,” 78; Ward, “The Garden City Introduced,” 15.

⁵³ Stockholm’s first regional proposal was issued in 1952. The limited proposal was later revised in 1958 and again in 1967.

of new towns would be strung, each housing 10,000 to 20,000 people within a 500-meter radius of a civic center. Arranged in a “finger plan,” it reinforced both the growth of the region and the centrality of the primary city.⁵⁴ This placement also made it easier to develop new towns alongside infrastructure. Helsinki, on the other hand, followed what it called the “Seven Towns Plan” published in 1962 by Heikki von Hertzen, the man who later developed Tapiola, Finland’s first new town.⁵⁵ Von Hertzen’s plan called for a limit to the size of Helsinki and placed the excess population in a series of new towns located along Finland’s southern coast. Helsinki’s postwar regional plans also drew upon work by CIAM member Alvar Aalto, who introduced Finland to many of CIAM’s ideas in the early 1930s through projects like the Sunila Sulfate Mill (1936-53) that explored patterns of decentralization through social housing projects. The neighborhood unit once again became the basis for these patterns, but Aalto adjusted it according to the Finland’s own social structure and topography while introducing new technologies to create a healthier and more modern living environment.⁵⁶

Reconstruction plans along decentralist lines were also produced for Tokyo, although they proved to be far less fruitful and visionary than those produced in Europe. The Japanese state held many of the same concerns as its European peers, such as housing shortages, the development of industry, rapid urbanization, and uncontrolled suburbanization, making decentralist planning and new satellite towns quite appealing. Because of the extensive damage across the nation, Japan passed the *Sensai fukkō toshi keikaku* (War Damage Rehabilitation Plan) in 1945 to aide in the reconstruction of 115 cities devastated by war-time bombing, but as Hein points out, reconstruction plans did not lead to any major discussion on city planning in Japan or affect real change on the city itself. Nevertheless, some visionary reconstruction plans were proposed that foreshadowed the new town project that would take off in the 1960s when the

⁵⁴ Merlin, “New Town Movement in Europe,” 81; Merlin, *New Towns: Regional Planning and Development*, 63-69.

⁵⁵ Heikki von Hertzen, and Paul D. Spreiregen, *Building a New Town; Finland's New Garden City, Tapiola*. (Cambridge, Mass: MIT Press, 1971), 188.

⁵⁶ Eric Mumford, “Alvar Aalto’s Urban Planning and CIAM Urbanism,” *Alvar Aalto-Second Nature* (Weil-am-Rhein, Germany: Vitra Design Museum, 2014), 6-7.

1963 New Residential Town Development Act was passed. Ishikawa Hideaki produced a visionary, although unrealistic, reconstruction plan for Tokyo immediately after the war, building on the Tokyo Green Space Plan of the 1930s and the Metropolitan Green Space and Air Defence Open Space plans of 1939 to which he had contributed. His proposal drew close parallels to the Greater London Plan of 1944 through an extensive network of greenbelts, parkways, and green corridors throughout the city, which would be surrounded by farmland and smaller sub-cities of 200,000 to 300,000 people. Because of funding shortages, opposition movements, and the unrealistic nature of his plan, Ishikawa's proposal was never implemented, but it did lay the groundwork for the 1958 National Capital Region Development Plan (NCRDP), which designated a greenbelt and series of satellite towns around Tokyo.⁵⁷ (This plan too was largely ineffective and the greenbelt and satellite city idea was superseded by a suburban zone in the second NCRDP released in 1968.)

More radical plans were also put forward in Japan during the 1950s and 1960s that took a different approach to managing the growth of the city by colonizing Tokyo Bay. These plans included the Neo-Tokyo Plan of 1959, Ōtaka Masato's 1959 Marine City Plan, and Tange Kenzo's Tokyo Bay Plan of 1960. The Neo-Tokyo Plan, produced by the Industrial Planning Conference, "called for 400 million square meters of landfill along the Tokyo Bay coasts," and a 200-million-square-meter landfill that would create space for commercial, industrial, and residential uses, as well as a large central park.⁵⁸ Ōtaka's plan similarly looked at Tokyo Bay as a new territorial frontier, but was drawn up in response to a proposal by Kanō Hisaakira in 1957 to explode a mountain range in neighboring Chiba Prefecture with a nuclear blast to infill the entire bay. Ōtaka's approach was more rationalistic than Kanō's; he instead proposed a linear city-like belt of carefully organized residential communities and infrastructural components wrapped around the edge of the bay. Tange's plan, which drew heavily on the principles of the Neo-Tokyo Plan, also belonged to the "geneology of linear city studies" that included architects like

⁵⁷ Sorensen, *The Making of Urban Japan*, 163-167; Hein, "Visionary Plans and Planners," 316.

⁵⁸ Sorensen, *The Making of Urban Japan*, 190.

“Nikolai Miliutin... Le Corbusier, and the London-based MARS group,” and was emblematic of a new fascination with *jinkō toshi* (artificial land) that rejected traditional relationships with the groundplan, as Kuan has shown in “Land as an Architectural Idea in Modern Japan.”⁵⁹ Tange’s plan was also a direct response to the growing population and traffic congestion of the city.⁶⁰ He proposed a 30-kilometer megastructure that would span Tokyo Bay, acting as the city’s “Civic Axis.” This impressive piece of infrastructure would organize both communication systems as well as residential units, which branched perpendicularly off the main axis.⁶¹ For the most part, such ambitious proposals for Tokyo produced in the two decades following the war remained theoretical. Nevertheless, they were important predecessors to the more pragmatic new towns, as they explored issues of territoriality and organization in the city.

Ultimately, change to Japanese cities was more effectively implemented through its land readjustment policies and its own new town law than through visionary regional plans. Despite the large-scale destruction of Tokyo’s hardscape during the war, property rights in Japan remained quite strong, and in the end the city “was largely rebuilt in an ad hoc manner,” according to Sorensen.⁶² When the second NCRDP was passed in 1968, it dealt the final blow to the idealism of Ishikawa’s 1946 reconstruction plan by replacing the greenbelt with a Suburban Development Area, effectively eliminating the buffer between the satellite towns and built up area of the central city.⁶³ New towns, meanwhile, were developed as municipal projects in partnership with the Japan Housing Corporation (JHC) and other public housing agencies. They were made feasible by the 1963 New Residential Town Development Act, which led to the construction of 188 new towns across the nation by 1975.⁶⁴ But, as University of Paris professor Tanabe Hiroshi wrote in his 1977 article “Problems of the New Towns in Japan” for *Geoforum*, the new

⁵⁹ Kuan, “Land as an Architectural Idea in Modern Japan,” 189, 196-197.

⁶⁰ Inagaki, *Nihon no kindai kenchiku*, 322.

⁶¹ Kuan, “Land as an Architectural Idea in Modern Japan,” 194.

⁶² Sorensen, *The Making of Urban Japan*, 167.

⁶³ *Ibid.*, 188.

⁶⁴ The Japan Housing Corporation, *Japan Housing Corporation and its Achievements*, (Tokyo: Japan Housing Corp, 1976), 2-4; Toshihide Katayose, *Jikken toshi: senri nyūtaun wa ikani tsukurareta ka* [Experimental City: How Senri New Town was Built] (Tokyo: Shakai Shisōsha, 1981), 3.

towns in Japan also significantly departed from their more independent counterparts in England, functioning as “suburban dormitory settlements” rather than self-sufficient new towns.⁶⁵ This was not at all contradictory to the objectives of the postwar Japanese new town, which was predominately concerned with the provision of housing rather than the development of independent satellite cities. The involvement of the Japan Housing Corporation (JHC) as the primary mechanism through which new towns were constructed reaffirmed this, as it was established by the state as a semi-public agency in 1955 to meet housing needs in an efficient manner. In addition to Senri New Town (the first new town) and Tama New Town (the largest new town), the JHC contributed to the production of dozens of new towns across the nation in the following decades, including Kohoku New Town near Yokohama, Heijō New Town near Nara, Hokusetsu New Town near Kobe, and Kozōji New Town in Aichi Prefecture. The JHC envisioned not only modern and efficient housing in the projects, but a comfortable residential environment that included civic amenities, modern infrastructure, and access to nature.⁶⁶ In many ways, even though they were conceptually diluted by priorities of efficiency and pragmatism, the new town became the vehicle for the ambitious visions suggested by the unattainable postwar reconstruction plans.

Scandinavian countries had similar interests in providing large quantities of high-quality residential housing to its citizens through the construction of new towns, but like Japan, had little actual interest in decentralization. Instead, they saw commercial centralization and population density as a positive thing and replaced the low-rise fabric of the English new town with a more varied one, as was done in Japanese new towns. Merlin suggests that because Scandinavian capitals were far less important than London at the time and because of the pressures of the postwar housing crisis, they were more eager to explore high-density alternatives.⁶⁷ This also enabled Scandinavian new towns to accommodate greater population densities and a larger variety of dwelling types, while still preserving the precious open space that created

⁶⁵ Hiroshi Tanabe, “Problems of the New Towns in Japan,” *GeoJournal: An International Journal on Human Geography and Environmental Sciences* 2, no.1, (1978): 39, accessed January 27, 2015. <http://www.jstor.org/stable/41142068>.

⁶⁶ The Japan Housing Corporation, *Japan Housing Corporation and its Achievements*, (Tokyo: Japan Housing Corp, 1976), 37.

⁶⁷ Merlin, *New Towns: Regional Planning and Development*, 68.

a verdant residential environment. The new towns of Vällingby in Sweden and Tapiola in Finland took a nuanced approach to this challenge. Vällingby, which was developed as a public project of the Stockholm Metropolitan Government and inaugurated in 1954, was both dense and human-centric. A pedestrianized civic center with a subway station connected the new town back to Stockholm and firmly anchored the center of the 911-hectare project.⁶⁸ Meanwhile, high-density, multi-family housing units were placed closest to the civic center, while single-family dwellings lined the periphery of the project, allowing for a density of 40 to 100 people per hectare and encouraging a mixture of social classes within neighborhood units of 15,000 people each. Tapiola, which covers only 260 hectares, ranged from 68 to 78 people per hectare and promised an equally varied architectural landscape. The Housing Foundation, a private foundation established by Heikki von Hertzen to develop Tapiola beginning in 1952, departed from bureaucratic approaches to urban design, instead assigning the neighborhood units and civic center to a variety of well-known architects, including Aarne Ervi, Alvar Aalto, and Aulis Blomstedt, which added variety to both architectural typology and character. This approach resulted in a fine-grained mixture of multi-family apartment dwellings of different scales placed adjacent to more private dwellings, such as townhouses and single-family homes, within four neighborhoods of 5,000 residents each.⁶⁹ Pedestrianized civic centers organized and anchored each new town. Vällingby Center, designed to serve 55,000 residents within a 3-kilometer radius, was the “first large new commercial center” to open in Sweden.⁷⁰ It was designed to serve the daily needs of the surrounding residents, providing coffee shops, laundromats, health services, banks, social institutions, office space, and other amenities for residents. It also functioned as part of a network of other new town nodes that Stockholm developed at the same time, such as Hässelby Strand, a center that provided 12,000 to 15,000 people with more specialized services, including post offices or nurseries. Smaller neighborhood centers were also distributed throughout

⁶⁸ David Pass, *Vällingby and Farsta--From Idea to Reality: The New Community Development Process in Stockholm* (Cambridge, Mass: MIT Press, 1973), 15, 72.

⁶⁹ Merlin, *New Towns: Regional Planning and Development*, 79, 85; Hertzen, and Spreiregen, *Building a New Town*, 158.

⁷⁰ Merlin, *New Towns: Regional Planning and Development*, 100.

Vällingby in order to provide communities with small clusters of shops within a walkable, 300-meter radius. In a similar way, small clusters of shops were dispersed throughout Tapiola's neighborhood units to supplement its civic center, which was an exquisite architectural environment that housed the new town's cultural, civic, and commercial functions.⁷¹ Japanese new towns followed a similar formula of using the pedestrianized civic center as the community focal point of a mix of low, mid, and high-density neighborhood units.

Japanese new towns also aspired to the luxuriously verdant atmosphere of Scandinavian new towns, which, as descendants of the garden-city tradition, celebrated their natural landscapes and emphasized their role in the design of residential environments. The treatment of the landscape in Vällingby and Tapiola was far more nuanced than in American or Japanese garden suburbs, which emphasized tree-lined avenues, manmade parks, and setbacks. While the Japanese bourgeoisie had toyed with the pastoral in a rather fantastical way, Scandinavian reverence for the natural environment resulted in far more sensitive urban planning strategies. In addition to neighborhood parks, the neighborhood units themselves were determined and defined by the natural landscape. In Stockholm, for example, this meant that the transportation system followed the natural topography, which delineated neighborhood units of roughly 1,000 dwellings each. Tapiola allocated 54% of its total land area to open space and was even gentler in its treatment of the landscape.⁷² The roadways and buildings alike were carefully placed within the hilly topography, causing as little disturbance as possible and preserving the region's exquisite forest for residents. Tapiola, perhaps, best exemplified a sophisticated place-based strategy to new town building that celebrated, rather than suppressed, its ecological richness. Both of these projects stood in ironic contrast to the Japanese new towns, which were frequently quite invasive of the landscape even while they aspired to preserve it.

⁷¹ Pass, *Vällingby and Farsta*, 95-97; Merlin, *New Towns: Regional Planning and Development*, 100-101.

⁷² Merlin, *New Towns: Regional Planning and Development*, 85; Herten, and Spreiregen, *Building a New Town*, 158.

The lineage, and even the parameters, of the postwar new town were complex, constantly in dialog with multiple threads of urban thought and with the aspirations of their own locales. Although postwar new towns clearly have roots in the early garden city movement, as Stephen Scott shows in his undergraduate thesis titled “Just Housing? Evidence of Garden City principles in a Postwar Japanese Housing Development,” they were really a culmination of the reconfiguration of the presences of a multitude of other ideas.⁷³ Even early in its history, the garden city was reimagined by interpretations that embraced some of its qualities but disregarded others. These interpretations, manifested in the garden suburbs of the United States and Japan, indulging utopian and nostalgic sentiments that were embedded within imagined landscapes. At the same time, the need to address the industrial city refused to fade and parallel conversations kept decentralist ideas alive with the satellite town while more radical and rationalist approaches put forward by CIAM pushed at the boundaries of urban thought. When CIAM put the human being back at the center of the city in its 1951 “Heart of the City” congress, so too did the state-initiated new town, which organized itself around the experience of the pedestrian. In its final form, the Japanese postwar new town shared more in common with its Scandinavian peers than with the garden city. Structurally oriented around the civic centers that organized high-density neighborhood units, schools, and parks, they shared a common objective of the postwar state: to manage suburban growth and provide large quantities of adequate housing in a high-quality residential environment shaped by qualities of the garden city. What connected the postwar Japanese new town back to the garden suburb of the early twentieth century was a shared reverence for an imagined mental and spatial landscape, at odds with its own ecology, and cultivated through nostalgia, fatigue, and hope.

⁷³ Stephen Scott, “Just Housing? Evidence of Garden City Principles in a Postwar Japanese Housing Development” (Undergraduate Thesis, New College of Florida, 2006).

Chapter 4: The Context of Public Housing Provision in Postwar Japan

The origins of Japan's postwar new towns lie not only in the new town movement pioneered in Europe following World War II, but also in Japan's own history of public housing provision and the state's response to an extraordinary postwar housing crisis. World War II left the nation in shambles. Wartime bombing had damaged over one hundred cities, and nearly 9.7 million people were displaced. As the nation turned its attention towards the reconstruction of its government and economy, migrants from the colonies and the countryside flooded Japan's major cities, exacerbating a housing shortage that had reached 4.2 million nationally.¹ Rebuilding industry became the top priority of Japan's new Ministry of International Trade and Industry (MITI), founded in 1949 to nurture economic and industrial growth.² It ushered in an age of high-speed economic growth that left the city and its people behind. While MITI successfully guided Japan's GNP to new peaks between 1952 and 1970, rapid urbanization ensued, creating extreme density in the industrial city and unchecked suburban sprawl along its fringes. The living conditions that resulted were abysmal and the housing crisis was made worse: the cities were overcrowded, the existing housing was stock deteriorated, and pollution from Japan's prized industrial sector plagued urban dwellers with an environmental crisis that caused illness and at times death. A renewed romanticization of the suburbs emerged around growing desires to escape the magnetic industrial city. The suburbs became the site and symbol of the postwar debate about national identity, and a new

¹ André Sorensen, and Carolin Funck, *Living Cities in Japan: Citizens' Movements, Machizukuri and Local Environments* (London: Routledge, 2007), 158-159.

² Chalmers Johnson, *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925-1975*, (Stanford, Calif: Stanford University Press, 1982), 3, 176.

discourse of the middle-class nuclear family arose from a mix of nationalistic ideals and Western appropriations.

When the state finally turned its attention to the housing crisis with the establishment of the Japan Housing Corporation (JHC) in 1955, public housing itself became contested space as Japan began to redefine its national identity. Building upon the practices established by the Dōjunkai Foundation, which was founded to provide emergency public housing and experimental modern apartment prototypes following the 1923 Great Kantō Earthquake, the JHC constructed modern dwelling units that pushed the limits of tradition, material, and technology, redefining domesticity in postwar Japan.³ It pioneered not only new technologies and construction techniques to improve the cost and implementation of public housing, it also enforced new domestic patterns that evolved from the ideas of reformists like Nishiyama Uzō and the Yoshitake Laboratory at Tokyo University. Championing the lifestyle of the *sarariman* (salary man), characterized by work and leisure, the JHC revolutionized the dwelling in the postwar period through the construction of housing estates and new towns across the nation and codified the emerging social norms of the new middle class in both the home and the city through the nDK Apartment.⁴ Public housing provision in postwar Japan did more than address the housing crisis. It ushered in a radical transformation of Japanese domestic space, and with it, middle-class identity.

The Historical and Social Context of the Postwar Dwelling

Japan's postwar new towns grew out of a national climate characterized by a housing and environmental crisis that overshadowed the nation's high-speed growth. The destruction of nearly 63,000 hectares of urban land during World War II exacerbated a housing crisis set off by the 1923 Great Kantō Earthquake, a recession the following year, and the Great Depression and was left unresolved as the nation continued

³ Nihon jūtaku kōdan, *Nihon jūtaku kōdanshi* [History of the Japan Housing Corporation] (Tokyo: Nihon jūtaku kōdan, 1981), 30.

⁴ See Laura Neitzel, *Living Modern: Danchi Housing and Postwar Japan*, (Ph.D. Dissertation, Columbia University, 2004).

its expansion into Asia and eventually waged war.⁵ By the end of World War II, residents of Japan's largest cities, which were rapidly growing and strained for resources, faced increasingly overcrowded and polluted conditions. With 115 cities damaged and nearly 2.3 million homes destroyed, the nation was short 4.2 million dwelling units by 1946 and 9.7 million people were displaced.⁶ The state did little to address this crisis in the immediate aftermath of the war, instead turning its attention to high-speed growth under the guidance of the Ministry of International Trade and Industry (MITI). Between 1952 and 1970, Japan's economy grew at an unprecedented rate, but as economist Taira Koji observed, "the country was GNP-rich, but the people were poor."⁷ Even while the national economy expanded, Japanese households struggled to make ends meet. At the same time, the developmental state's singular focus on economic growth also fostered a series of environmental crises that only worsened urban conditions.⁸ By the late 1960s, pollution in the water, air, and food began to severely affect the well-being of Japan's urban residents while development along the urban fringe wreaked havoc on the pastoral landscape so prized by the pre-war bourgeoisie. The newly democratic nation simply could not cope with the explosion of industry and population in the postwar period.

A strong state, one that controlled the economy and city planning, emerged during and after World War II and turned its attention exclusively to national economic growth, leaving its cities and residents behind. Japan emerged from the 1940s as a "developmental state," which allowed it to set "substantive social and economic goals" that would encourage high economic growth, rather than just regulate them, and place industrial policy at the center of economic policy.⁹ As a result, productivity rates rose to 9.5% between 1950 and 1967, peaking at 10% before the 1973 oil shock. Chalmers Johnson argued in *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1924-1975* that this "economic miracle" was the

⁵ Ann Waswo, *Housing in Postwar Japan: A Social History* (London: Routledge Curzon, 2002), 43.

⁶ Sorensen and Funck, *Living Cities in Japan*, 158-159.

⁷ Koji Taira, "Dialectics of Economic Growth," in *Postwar Japan as History*, ed. Andrew Gordon (Berkeley: University of California Press, 1993), 174.

⁸ Sorensen and Funck, *Living Cities in Japan*, 6.

⁹ Johnson, *MITI and the Japanese Miracle*, 19.

product of the effort of many governmental institutions, most notably the Ministry of International Trade and Industry (MITI), which led economic development in Japan throughout the postwar and high-growth periods. MITI was a descendent of the Ministry of Commerce and Industry (MCI) that guided a dramatic shift in the nation's industrial structure in the 1930s, when heavy industry increased from 35% to 63% of all manufacturing. Under the guidance of the MCI, industrialization intensified during the war as industrial sectors were converted to war production one by one. In 1943, the conversion of the MCI into the Ministry of Munitions (MM), gave the state full control of the economy, having enormous consequences on future industrial policy. A new version of the MCI replaced the MM and retained all of its functions, most notably control over "electric power, airplane manufacture, and industrial planning," solidifying the state's power over the economy.¹⁰ When MITI replaced the MCI in 1949, little changed, as administrative purges carried out by the Supreme Commander for the Allied Powers (SCAP) had relatively little effect. MITI's powers were further intensified by the Foreign Exchange and Foreign Trade Control Law of 1949, as well as by *amakudari*, a practice that linked the institution to industry through the placement of retirees in senior positions in Japan's most powerful industries.¹¹ Uninhibited by all but the most powerful interest groups, MITI enjoyed enormous oversight of Japan economic development during the high-growth period, affecting great change in the nation's cities.

The high economic growth fostered by MITI was not without consequence, and it produced a serious environmental crisis that compounded the problems of the housing crisis, further worsening conditions in Japan's cities. By the 1960s, "intense concentrations of industrial pollution in air and water," a result of MITI's industrialization policies during the high-growth period, plagued urban dwellers. Unfortunately the consequences of industrial pollution were not limited to "miserable living conditions," eventually resulting in "hundreds of deaths and thousands of debilitating and painful diseases" such as Minamata

¹⁰ Ibid., 159, 165-172, 274.

¹¹ Ibid., 44, 70, 173-176, 194.

disease, Yokkaichi asthma, and *itai-itai* disease.¹² One of the most tragic incidents of the environmental crisis, Minamata disease (organic mercury poisoning caused by industrial pollution) was emblematic of both the severity of the crisis and the government's lack of response during the 1950s and 1960s.¹³ The events at Minamata reoccurred in communities across Japan throughout the postwar and high-growth periods. In fact, it was not until the 1970s that the nation began to respond to the voices of the victims of the environmental crisis. The crisis sparked angry protests in the 1960s against industrial pollution while political preferences shifted from the ruling LDP to more liberal politicians. Much of the blame for the environmental crisis, characterized by the aforementioned diseases, cadmium contamination, severe air pollution, vehicular accidents, noise pollution, and the housing shortage, fell on MITI's shoulders, the primary driver behind Japan's rapid economic growth; but the central government was slow to address these problems, often "collude[ing] with industry efforts to evade responsibility."¹⁴ In 1967 the Pollutions Countermeasures Basic Law finally set pollution standards for "air, water, soil, noise, vibration, subsidence, and offensive odors" for the first time, although this was largely ineffective until

¹² André Sorensen and Carolin Funck, *Living Cities in Japan: Citizens' Movements, Machizukuri and Local Environments*, (London: Routledge, 2007), 15-16.

¹³ Miller, Ian Jared, Julia Adeney Thomas, and Brett L. Walker, *Japan at Nature's Edge: The Environmental Context of a Global Power* (Honolulu: University of Hawaii Press, 2013), 211; Timothy S. George, *Minamata: Pollution and the Struggle for Democracy in Postwar Japan* (Cambridge Mass: Harvard University Asia Center, 2001), 1-3, 7-8, 51-64. Minamata disease best exemplified the tragedy of the environmental crisis and the government's persistent denial of its existence. The disease, an epidemic of mercury poisoning, caused "severe brain damage, neurological degeneration, physical deformities, numbness, slurred and involuntary speech, involuntary movements, unconsciousness, and death." First appearing in the early 1950s, it caused dizziness, numbness, and strange behaviors in some of the fisherman who lived in the area, as well as similar symptoms in cats and other wildlife. By 1956, several members of the Minamata community, including children, had died of this "strange disease," the origins of which doctors were either unable or unwilling to pinpoint. Local officials resisted efforts by researchers at Kumamoto University Medical School to establish a plausible heavy metal theory and the Shin Nitchitsu factory responsible for the contamination also refused to provide any material samples that would aid in the investigation. When the organic mercury theory was finally put forward in 1959, the company refuted it through a series of propaganda pamphlets. Meanwhile, in conjunction with Governor Teramoto Hirosaku of Kumamoto and MITI, Shin Nitchitsu successfully blocked efforts by the Food Hygiene Investigation Committee to finalize a report on the crisis, which was later buried. MITI, keen to avoid reliance on imported chemicals and preoccupied with high-speed growth, willingly turned a blind eye to the crisis. George concludes that, "Minamata is a story not just of the environmental and human costs of rapid "modernization," but also of a callous and murderous corporation hiding its guilt; of the collusion and confusion at all levels of government and society, including the scientific community and the media, that allowed the tragedy to happen and then be covered up; of powerful pressures against speaking out and taking action; of stigmatization and ostracism in the local society of a company town..." (George, 7-8). The tragedy at Minamata far exceeded even the terrific symptoms faced by its victims. It was a tragedy of moral and environmental neglect on the part of government and major industry alike.

¹⁴ Johnson, *MITI and the Japanese Miracle*, 282; Sorensen, *The Making of Urban Japan*, 203.

the establishment of the Environment Agency and fourteen new pollution control laws in 1970.¹⁵ Historian Timothy S. George, asserts in *Minamata: Pollution and the Struggle for Democracy in Postwar Japan*, that the story of Minamata describes not only the reality of suffering and neglect in postwar Japan, but also the negotiation of democracy as the voices of victims set new patterns of civic expression throughout their fight.¹⁶ Minamata remained a sobering tale of the costs of MITI's singular focus on high-speed economic growth to the exclusion of all else.

The other consequence of high economic growth was the rapid urbanization and densification of Japan's largest cities. MITI's intense industrial development of Japan's major cities, particularly those in the Pacific Belt, prompted a flood of migrants seeking work from both the countryside and former colonies.¹⁷ Tokyo's population, which had dropped to 3.5 million by 1945, more than doubled to 8 million by 1955, reaching 10.9 million in 1965 with a population density of over 156 people per hectare in built-up areas. By 1954, over 500,000 people migrated to Tokyo each year, totaling 5.7 million migrants (and 11 million across the nation) between 1950 and 1975.¹⁸ The conditions in the city, however, were anything but welcoming and resources to construct new dwellings remained in short supply. Material shortages were beginning to impact the housing sector as early as 1941, driving up rents and increasing scarcity.¹⁹

¹⁵ Johnson, *MITI and the Japanese Miracle*, 282.

¹⁶ George, *Minamata*, 280-281.

¹⁷ Jeremy D. Alden, Moriaki Hirohara and Hirofumi Abe, "The Impact of Recent Urbanisation on Inner City Development in Japan," *The Town Planning Review* 59, no.4 (10, 1988): 366-368. The "Pacific Belt Concept" belonged to a series of policies proposed by MITI in the 1950s designed to spur rapid economic development, including the "Economic Self-Sufficiency Plan" of 1955, the "New Long-Term Economic Plan" of 1957, and the National Income-Doubling Plan" of 1960. The 1961 Pacific Belt Concept designated Tokyo, Osaka, Nagoya, and Kitakyūshū as major industrial areas.

¹⁸ Alden, Hirohara and Abe, "The Impact of Recent Urbanisation on Inner City Development in Japan," 368; Ministry of Internal Affairs and Communications: Statistic Bureau, "2-5 Population by Prefecture and Sex (1884--2009)" *Chapter 2 Population and Households*, Statistics Bureau (1996), accessed April, 2015, <http://www.stat.go.jp/data/chouki/zuhyou/02-05.xls>; Ministry of Internal Affairs and Communications: Statistic Bureau, "2-7 Population, Population Density, Population of Densely Inhabited Districts and Area by Prefecture, All Shi and All Gun (1898--2005)" *Chapter 2 Population and Households*, Statistics Bureau (1996), accessed April, 2015, <http://www.stat.go.jp/data/chouki/zuhyou/02-07.xls>; Ministry of Internal Affairs and Communications: Statistic Bureau, "2-37-b Intra-prefectural Migrants, In-migrants from and Out-migrants to Other Prefectures and Net Migration Rate, by Prefectures and Sex (1954--2004)" *Chapter 2 Population and Households*, Statistics Bureau (1996), accessed April, 2015, <http://www.stat.go.jp/data/chouki/zuhyou/02-37-b.xls>.

Tokyo's population peaked at 7.4 million during the war. The net migration rate in 1954 reached 3.14, dropping to 0.19 in 1966, just before turning negative the following year.

¹⁹ Waswo, *Housing in Postwar Japan*, 45. The state established the short-lived *Jūtaku eidan* (Housing Corporation) in 1941

Although the central government had made some effort to provide emergency and low-income housing through the passage of the Public Housing Act in 1951, very little else was done during the first decade after the war to resolve the housing crisis.²⁰ As land values skyrocketed, working-class families made do with sluggish wages and cramped, haphazard housing grew further and further from the city in a pattern of unchecked suburban sprawl along the urban fringe. In the wake of rapid industrialization and migration, Japan's cities could not keep up.

While MITI focused on nurturing economic and industrial growth, Japan's cities fell behind. Most of the city's housing stock following the war consisted of small wooden row or terrace houses called *nagaya* that dated back to the Tokugawa Period (1603-1867 AD). Often dilapidated and overcrowded, they ranged between 12 and 30 square meters and were typically no larger than two rooms with communal toilets and washrooms, and were rented by the urban working poor rather than owned. Middle-class dwellings were equipped with private facilities, but were only slightly larger, ranging from 50 to 80 square meters. Because *nagaya* were often densely packed along extremely narrow alleyways, they were also perceived to be unhygienic and unsafe, in no small part because of their susceptibility to fire. The density of flammable wooden *nagaya* made Japanese cities extremely vulnerable to firebombing during the war, leaving reformers, the state, and urban residents increasingly uneasy. Cohabitation practices only exacerbated these dangers. As Ann Waswo, a social historian of modern Japan, points out in *Housing in Postwar Japan: A Social History*, in some cases the overcrowding in *nagaya* was so extreme that, "the renting or subletting of tatami mats within dwellings as well as the charging of 'key money' for access to rented accommodation," resulted in "black market rents well above official levels."²¹ Many social reformers at the time also took the *nagaya* as an indication of Japan's "backwardness," and sought to

through the Rented Building Association Law to provide housing in its colonies and industrial districts. It was dissolved in 1947 by SCAP.

²⁰ David W. Edgington, "Chronology of Major Urban and Regional Planning Legislation in Japan," in *Planning for Cities and Regions in Japan*, ed. Philip Shapira, Ian Masser, and David W. Edgington (Liverpool: Liverpool University Press, 1994), 185.

²¹ Waswo, *Housing in Postwar Japan*, 40-43, 49-50.

make “natural light, ventilation, and sanitation” a standard in Japanese homes.²² Further concerns took a moral overtone, as reformists such as Kyoto University professor Nishiyama Uzō, and later architect Hamaguchi Miho, began to challenge traditional patterns of domesticity that conflated different uses within a single space. Such practices relegated family functions to the back of the home and dedicated any additional space to “public and paternalistic” activities.²³ The *nagaya* was, quite simply, technologically and socially outdated.

The dire conditions and high rents of the postwar city made the growing suburbs increasingly desirable to urban residents. The suburbanization of the urban fringe along rail lines was already well underway by the 1960s when migration to the suburbs overtook migration to the central city itself (the urban population growth rate began to decline by 1965).²⁴ As Jordan Sand has shown in “Landscape of Contradictions: The Bourgeois Mind and the Colonization of Tokyo’s Suburbs,” the suburbs became a place of both mental and spatial negotiation as early as the Meiji period when Tokyo began to expand rapidly into the surrounding plains along developing rail lines.²⁵ This shift towards the suburbs had tremendous implications for the patterns of daily life for most suburban residents. While suburbanization is frequently “accompanied by an increase of economic activities or jobs in the suburbs,” this was not the case for Japan, resulting in increasingly long and congested commutes into the city.²⁶ The ad hoc development of the suburbs also left much to be desired. The pressure on the housing market meant that

²² Ibid., 62.

²³ Waswo, *Housing in Postwar Japan*, 64-65; Andrea Yuri Flores Urushima, “Genesis and Culmination of Uzō Nishiyama’s Proposal of a ‘Model Core of a Future City’ for the Expo 70 Site (1960-73),” *Planning Perspectives* 22 (10, 2007): 393. Both Nishiyama and Hamaguchi played a role in the development of modern public housing prototypes. Nishiyama, who graduated from Kyoto University in 1933, was a controversial figure in the history of Japanese planning and was deeply committed to improving living conditions in the city. While he was renowned in Kansai circles (Kansai encompasses the Western portion of the main Japanese island of Honshu and includes Kobe, Osaka, Kyoto, and Nara), he was consistently critical of the national government and was alienated from Tokyo circles.

²⁴ Kohei Okamoto, “Suburbanization of Tokyo and the Daily Lives of Suburban People,” in *The Japanese City = Nihon no toshi*, ed. P.P. Karan and Kristin Stapleton (Lexington, Ky: University of Kentucky Press, 1997), 81.

²⁵ Jordan Sand, “Landscape of Contradictions: The Bourgeois Mind and the Colonization of Tokyo’s Suburbs,” *Japanese Studies* 29, no. 2 (2009): 175, doi: 10.1080/10371390902893044.

²⁶ Okamoto, “Suburbanization of Tokyo,” 83. By 1970, 1.6 million workers commuted into the central Tokyo War Area each year. This number doubled to 3.1 million by 1990.

residences, particularly in the suburbs, were often built without the necessary infrastructure, like roads, water and sewerage pipes, parks, or even bus stations.²⁷ Public services, such as waste collection and fire prevention, also became increasingly difficult to administer, as suburbs were rarely planned, often situated on whatever spare piece of land was available.²⁸ Like the suburbs of the early twentieth century, they too consumed the surrounding agricultural land at an alarming rate, aggravating the tension between the realities of the modern city and an imagined pastoral landscape.

The postwar new town offered a seductive alternative to both the crowded conventional city and the haphazard conventional suburb, especially from the perspective of the bureaucracy. The models in London and Sweden promised an escape from the overcrowded and polluted conditions of the city. Carefully planned to allocate space for greenery and provide adequate modern infrastructure, they were an antidote to the unchecked suburbs springing up along urban fringe with “inadequate roads, lack of sewerage, lack of public facilities...and [a] close intermingling of residential areas with obnoxious neighbors such as car-wrecking yards and polluting factories.”²⁹ With a high ratio of open green space per person, as well as distance from heavy industry, new towns promised to provide families with a healthy environment for their children. They also allowed municipalities to exercise more control over the overall quality of the environment, offering a refuge from the overcrowded and heavily polluted industrial city.

The postwar new town was an appealing technology for reasons beyond its role in managing suburban sprawl; it symbolized what Japan hoped to become as a modern, democratic nation. Fears of future militarism paired with a strong desire for peace and democracy demanded the construction of a revised national culture and a new system of governance immediately after the war. In 1947, the Diet passed a

²⁷ Ōsakafu (Japan: Prefecture), *Senri nyūtaun no kensetsu* [The Construction of Senri New Town], (Ōsaka: Osaka Prefectural Government, 1970), 75-76.

²⁸ Waswo, *Housing in Postwar Japan*, 116.

²⁹ Sorensen, *The Making of Urban Japan*, 204-207.

new postwar constitution under Prime Minister Katayama Tetsu under the guidance of the postwar US-dominated Occupation (1945-52), thereby renouncing war and establishing a democracy.³⁰ In this context, nationalism took a new form in the postwar period, as ultra-nationalist and militarist vestiges of the prewar past were eschewed, and national identity became the subject of debate. Both the left and right contributed to this conversation, with discourses about the *minzoku* (ethnic people) expressed both in terms of Marxist liberation and Japanese exceptionalism.³¹ According to anthropologist William W. Kelly, “one of the primary themes of public discourse in postwar Japan has been the fervent fascination with national character, a ‘Who are we Japanese?’ boom” that has shaped interpretations of “culture, character, and tradition.”³² This was certainly reflected in the unrealized postwar reconstruction plans for Tokyo by architects like Ishikawa Hideaki and later Tange Kenzō. By the 1960s, these arguments morphed into a renewed version of the “pastoral ideal,” now characterized by the “*furusato būmu* (home village boom) [that] idealized country life and country folk as the true exemplars of Japanese values and communal forms,” and only encouraged Japan’s cities to continue their outward expansion and colonization of the agricultural landscape.³³ The dwelling and city once again became contested space as the nation sought to redefine its narrative.

Questions of national identity began to reshape the postwar dwelling and family, and with it new domestic paradigms cultivated actively by the state began to emerge that would later structure the new towns. In 1960, the Ikeda government introduced the National Income-Doubling Plan, which was followed by a period of optimistic private corporate investments that sustained the high-growth of the 1950s.³⁴ Economic growth and technological innovations drove large changes in the urban environment

³⁰ John W. Dower, “Peace and Democracy in Two Systems,” in *Postwar Japan as History*, ed. Andrew Gordon, (Berkeley: University of California Press, 1993), 3 and 7.

³¹ Carol Gluck, “The Past in the Present,” in *Postwar Japan as History*, ed. Andrew Gordon (Berkeley: University of California Press, 1993), 88.

³² William W. Kelly, “Metropolitan Japan,” in *Postwar Japan as History*, ed. Andrew Gordon, (Berkeley: University of California Press, 1993), 193.

³³ *Ibid.*, 194.

³⁴ Johnson, *MITI and the Japanese Miracle*, 16; Gary D. Allinson, “Conservative Rule,” in *Postwar Japan as History*, ed.

and people's daily lives as a new social paradigm of the "*chūryū*" (middle stream) took root in Japan.³⁵ Even though reality was far more complex, opinion polls show that many Japanese at this time began to identify with the "middle stream," contributing to the formation of overarching "generalizations about the nature of Japanese society as a society of a 'new middle mass' in which social strata or classes had lost relevance." This conception of Japan as a middle-class society more or less continues to the present day. William W. Kelly, an anthropologist at Yale University, describes this shift through observations made by Ezra Vogel and David Plath in the 1950s and 1960s:

Vogel and his wife realized that a double displacement—of population and life-style—was occurring in Mamachi in the late 1950s. As he titled his book, a 'new middle class' of white collar employees was emerging amid the shopkeepers, small business people, and professionals of the old middle class, and these new residents were changing Mamachi from urban fringe town to metropolitan bedburb...[At the same time, Plath's] book is both an ethnography of those lifeways and also a demonstration of the growing attractiveness of the life and leisure of the *sarariman*. His comments echoed conclusions of Vogel about this career path as 'a model of life which is modest enough to be within the range of realistic hopes and modern enough to be worthy of their highest aspirations.'³⁶

The white-collar *sarariman* (salaryman) and his family became the prototype of the modern middle-class family, symbolizing a dramatic transformation of family structure, domestic space, and the city. The reconstruction of middle-class identity built upon early twentieth-century bourgeois attitudes towards place, and particularly towards the fluid boundary between the urban and rural. This, Sand notes, was as much a social attitude as it was spatial, as it expressed "their will for moral self-reform, as well as for the reform of society as a whole, based on cosmopolitan models that blended foreign (mostly Western) elements with re-imagined forms of native tradition."³⁷ Although the city's relationship with the suburbs had become less romantic and more pragmatic in the postwar period, devolving into an isolated commuter

Andrew Gordon (Berkeley: University of California Press, 1993), 134-135. Ikeda Hayato, a former finance minister and president of the LDP, became prime minister in 1960. He was instrumental in passing the Income Doubling Plan of 1960, a comprehensive economic policy aimed at doubling both national and individual incomes by increasing investment, production, and export. Gary D. Allison noted that there was also a political dimension to the plan.

³⁵ Taira, "Dialectics of Economic Growth," 182.

³⁶ Kelly, "Metropolitan Japan," 190-191.

³⁷ Sand, "Landscape of Contradictions," 178.

lifestyle that created a moral dilemma between the comforts of the suburban home and the excitement of the city, the moral overtones of the early twentieth century remained.³⁸ With the sarariman as its icon, the nation began to negotiate the definitions of domesticity within the suburbs.

As the middle-class identity took shape, it began to define the roles of family members within the modern home, particularly that of the mother, shaping the form of the postwar dwelling itself. The conception of *ryōsai kenbo* (“good wife, wise mother”) that emerged in the early twentieth century continued throughout the postwar era. In her book *The Japanese Woman: Traditional Image & Changing Reality*, Sumiko Iwao, a professor at Keio University with a background in psychology, describes the changing role of women as mothers in postindustrial Japan, pointing to the growing prominence of the mother-child relationship at the cost of the spousal one as the child became the focal point of the home (as opposed to spouses or ancestors).³⁹ Security and warmth came to characterize the ideal mother while authority and discipline made the already absent father even more distant.⁴⁰ Kathleen S. Uno, a professor of Japanese history, reinforces this, writing “motherhood rather than wifehood became the dominant image of Japanese womanhood despite the fact women existed as full-time or nonworking mothers only among the upper ranks of the urban new middle class.”⁴¹ She points to three forces that allowed women to turn their attention more pointedly towards childrearing: an increase in nuclear families, the “diffusion” of new dwelling technologies, and a rise in household salaries.⁴² The importance of motherhood had profound consequences for the lives of women in the postwar period. To begin with, once a woman entered motherhood, all of her activities became “keyed to the phases of her children’s lives rather than

³⁸ Ibid., 189-90.

³⁹ Sumiko Iwao, *The Japanese Woman: Traditional Image & Changing Reality*, (New York: The Free Press, Macmillan, 1993), 125. See chapter 5, “Motherhood and the Home.”

⁴⁰ Iwao, *The Japanese Woman*, 126.

⁴¹ Kathleen S. Uno, “The Death of ‘Good Wife, Wise Mother,’” in *Postwar Japan as History*, ed. Andrew Gordon (Berkeley: University of California Press, 1993), 303-304.

⁴² Ibid., 304.

her own,” dramatically limiting her access to work opportunities, hobbies, and leisure.⁴³ However, the role of women was a subject of considerable debate, negotiated in the workplace, the home, and in the media. While the number of salaried women in the workforce increased from 4 million to 13.5 million between 1953 and 1980, a ‘housewife debate’ ensued as falling birthrates alarmed government officials.⁴⁴ For women at work, this frequently resulted in an imbalance not only in work opportunities but also in workplace roles.⁴⁵ The reality of everyday life within the postwar nuclear family was actually far more diverse than the discourse, but it was the narrative of the standardized nuclear family’s lifestyle that shaped the postwar dwelling and new town.⁴⁶

The postwar new town, and the dwellings in them, codified these social norms in built form. Like the suburb, the postwar dwelling became contested space, contributing to “an elimination of differences as nuclear family units constructed themselves as ‘micro-utopias’ sealed off from external conflict,” a reflection of a discourse that replaced the “productive” traditional extended family with the “consumer” nuclear family.⁴⁷ Because the twentieth-century suburb and dwelling were “constructed around conjugality and nuclear family intimacy,” a more independent and private lifestyle began to replace older habits of extended family cohabitation and co-sleeping.⁴⁸ Hamaguchi Ryuichi, a Tokyo Imperial University graduate who wrote prolifically about architecture and architectural theory, carefully

⁴³ Iwao, *The Japanese Woman*, 125.

⁴⁴ Sandra Buckley, “Altered States,” in *Postwar Japan as History*, ed. Andrew Gordon, (Berkeley: University of California Press, 1993), 349.

⁴⁵ Yuko Ogasawara, *Office Ladies and Salaried Men: Power, Gender and Work in Japanese Companies*, (Berkeley, Los Angeles, London: University of California Press, 1998), 10. It is important to recognize that, as Ogasawara suggested, the roles of women as oppressed versus influential is highly nuanced in Japan. While women certainly faced, and continue to face, disproportionate amounts of discrimination both in the workforce and in the family, they also exercise considerable power. Dichotomies often applied to feminism in the West are inadequate when discussing the roles and experiences of women in Japan. Ogasawara’s book captured this intimate and complex tension between subordination and power through an analysis of women in the workforce.

⁴⁶ Kelly, “Metropolitan Japan,” 211. This was despite the fact that the overall proportion of nuclear families in the Japanese population only increased from 54% of households in 1920, to 62.5% in 1965.

⁴⁷ Marilyn Ivy, “Formations of Mass Culture,” in *Postwar Japan as History*, ed. Andrew Gordon (Berkeley: University of California Press, 1993), 250; Sandra Buckley, “Altered States,” in *Postwar Japan as History*, ed. Andrew Gordon (Berkeley: University of California Press, 1993), 348.

⁴⁸ Sand, “Landscape of Contradictions,” 178, 186;

considered the relationship between room arrangement and modern nuclear family in his 1956 article “Image of a Family as Reflected in Room Arrangement” written for *Shinkenchiku*. Writing that “the arrangement of rooms in these so-called modern dwelling is something that absolutely could not have existed in prewar Japan,” he asserted that the epicenter of family life had shifted to a contiguous space that included both living and entertaining.⁴⁹ Relating this to the transformation of the family itself, most notably the housewife, he wrote, “One can imagine the housewife carrying on with her culinary duties and at the same time talking across the kitchen table to a guest. In other words, one can see where men and women are equal, the modern figure of the housewife in all her carefree cheerfulness.”⁵⁰ Hamaguchi went on to explain how the qualities of the modern dwelling, such as the bedroom, reflected the modern family, which had broken free of the “strong authority” of the husband’s parents, a product of the “earth-shattering revolution of the family system” with the country’s defeat.⁵¹ In the eyes of postwar reformers, the modern dwelling symbolized the liberation of the nuclear family from the past.

Advertising that idealized the middle-class nuclear family perpetuated a “my home-ism” trend in postwar Japan and helped create a discourse that the lifestyle of the modern nuclear family had become more dominant than it actually was. Marilyn Ivy, an anthropologist at Columbia University, attributes much of the postwar discourse surrounding postwar family and dwelling to a growing body of advertising, particularly with the rise of television and the standardization and homogenization of domestic and corporate life.⁵² Numerous new household goods flooded the market during the postwar and high-growth period, “such as washing machines, refrigerators, vacuum cleaners, TVs and electric rice cookers,” and consumer images bombarded the media that presented the housewife as a “well-dressed (Western) and

⁴⁹ Ryuichi Hamaguchi, “Image of a Family as Reflected in Room Arrangement,” *Shinkenchiku* 31, no.9 (1956): 56.

⁵⁰ *Ibid.*, 56.

⁵¹ *Ibid.*, 56-57. The old family system presumed a particular relationship between the oldest son and familial home, which symbolized the continuity of authority from father to son. Hamaguchi asserted that the dissolution of the old system of primogeniture detached this symbolism from the modern home, where men and women were equal and the husband-wife relationship became the most important bond of the family. Perhaps most importantly, Hamaguchi saw the modern dwelling as a space that included women in the lives of the family, rather than isolate them.

⁵² Ivy, “Formations of Mass Culture,” 250.

perfectly coiffured woman... standing in a spacious Western-style kitchen surrounded by state-of-the-art electric appliances.”⁵³ This drew the family into a narrative of mass consumption by “directing women’s lives into the interior spaces of the urban nuclear unit,” which Asian cultural studies scholar Sandra Buckley notes “was itself being physically restructured.”⁵⁴ New dwelling typologies equipped with modern kitchen units, played directly into the consumerist rhetoric of the high-growth period of the 1950s and 1960s. Neotraditionalist media messages bombarded women at the time to remain at home while the growing power of consumerism and the desire to purchase and furnish a new apartment or *manshon* (condominium) continued to draw women into the workforce.⁵⁵

Japan’s postwar new towns likewise responded more to the assumptions and aspirations perpetuated by the narrative of the modern nuclear family than they did to reality. While the modern dwelling prototypes that emerged in the 1950s and 1960s reflected the discourse of the standardized nuclear family and were internally constructed according to its privacy needs, postwar new towns were externally oriented around both the daily and life events of children. They were designed around the premise that mothers or young wives would need to access spheres no larger than their neighborhood units on a daily basis, presumably for shopping, childcare, and gossiping rather than working. This was notably evident in the spatial construction of new towns, as their distance from the central city made access to workplaces in the city exceedingly difficult. Neighborhood units that composed Japanese postwar new towns, reinforced this and referred to the scale of the child as the central building block of community by organizing the residential environment around the elementary school. This reflects the centrality of the child in both the home and family.⁵⁶ The postwar new town made the middle-class nuclear family the icon of modern, democratic living. Constructed around the imagined lifestyle of the middle-class nuclear family, it the

⁵³ Kazuo Usui, *Marketing and Consumption in Modern Japan* (Abingdon, Oxon: Routledge, 2014), 154; Buckley, “Altered States,” 352.

⁵⁴ Buckley, “Altered States,” 352.

⁵⁵ *Ibid.*, 352-353.

⁵⁶ Iwao, *The Japanese Woman*, 135.

most conducive to the lifestyle needs of children, most isolating for the professional housewife and most inconvenient for working husbands.

The History of Public Housing Prototypes from Taishō to the High-Growth Period

The postwar modern dwelling, particularly those built in new towns or in public housing estates, has its origin in the public housing prototypes developed in the middle of the twentieth century by state-run agencies such the Dōjunkai Foundation of the 1920s and 1930s and the Japan Housing Corporation (JHC) established in 1955.⁵⁷ The Dōjunkai Foundation, which was founded in 1924 to provide emergency dwellings for victims of the 1923 Great Kantō Earthquake, was the first to pioneer modern apartment prototypes that utilized Western technologies and principles in their design. The Dōjunkai Foundation was Japan's first foray into public housing. Active over eighteen years, its most notable achievement was not the nearly 11,000 emergency dwellings it constructed, but a small research arm that produced a small but iconic collection of modernist housing prototypes using state-of-the-art technology to construct modern, fire-resistant housing within a garden city atmosphere.⁵⁸ As an institutional think-tank, it made public housing a testing ground for new architectural, urban, and construction techniques, a role later carried forward by the JHC. Although the Dōjunkai Foundation was replaced in 1941 by the short-lived *Jūtaku eidan* (Housing Corporation), which was dissolved in 1947, its experimental prototypes set the tone for public housing design in the following century.⁵⁹

In search of safer, more efficient, and more affordable housing strategies, the Dōjunkai Foundation began to apply European and American theories of modern planning and design in its experimental apartment

⁵⁷ This is because the majority of housing constructed in postwar new towns *was* public housing constructed either by the JHC or local public housing agencies. This set a standard for the architectural quality of the new town and even private homes or purchased apartments followed similar design principles in the 1950s and 1960s.

⁵⁸ Jordan Sand, *House and Home in Modern Japan: Architecture Domestic Space and Bourgeois Culture 1880-1930* (Cambridge, Mass: Harvard University Press, 2003), 173; Eizō Inagaki, *Nihon no kindai kenchiku* [Modern Architecture of Japan] (Tokyo: Chuokōrin bijutsu shuppan, 1959), 199; Shigeru Satō, et. al. *Dōjunkai no apātomento to sono jidai* [Dojunkai Apartments and that Era] (Tokyo: Kajima shuppankai, 1998), 3-4. The Dōjunkai built 2,508 modern dwelling units.

⁵⁹ Inagaki, *Nihon no kindai kenchiku*, 198.

prototypes. Satō Shigeru, author of *Dōjunkai no apātomento to sono jidai* [Dōjunkai Apartments and that Era], pointed to three theorists who served as influential references for the Dōjunkai apartments: Camillo Sitte (*City Planning According to Artistic Principles*), Raymond Unwin (“Town Planning in Practice”), and Tony Garnier (*Une Cité Industrielle*). Elements from these theories, including the pedestrian plaza, the utopian garden city model, the use of modern materials like reinforced concrete, and the zoning of urban functions, became essential components of Dōjunkai design. The Dōjunkai Foundation also looked to existing cities for models, such as Vienna’s provision of social services like nurseries, schools, halls, and libraries, as well as shops and rail stations, within mid-rise public housing programs. They were similarly interested in Amsterdam’s public housing program, which used Sitte-like space on the interior of mid-rise apartment superblocks and terrace houses to create a picturesque effect.⁶⁰ These techniques were a radical departure from the traditionally dense and narrow city. In its place, these models offered a glimpse of what a hygienic, rational, and modern city could look like.

The Dōjunkai Foundation only produced fifteen experimental housing estates in Tokyo, but they would prove to be quite influential on the trajectory of public housing in Japan. Rooted in European precedent, three visions outlined the construction of these projects. First, as modernist apartment prototypes, they would contribute new architectural and programmatic qualities to the urban fabric. Secondly, they would test the replacement of more dangerous wooden dwellings with safe reinforced concrete structures. Finally, they would create much-needed greenery and public space to the dense city through the provision of such things as courtyards and street fronts. Uchida Yoshizō and Kishida Hidetō, both architects trained at Tokyo Imperial University (present-day Tokyo University), designed the first apartment unit prototypes for the Dōjunkai.⁶¹ Early units generally consisted of two or three apartment units that shared a stairwell and were aligned linearly to form a rectangular slab. Later corridor-type apartment dwellings were also

⁶⁰ Satō, *Dōjunkai no apātomento to sono jidai*, 5-11.

⁶¹ Ibid., 53. Kawamoto Ryūichi, Nakamura Satoru (?), Washisu Akira, and Kurosaki Hideo also contributed to the design of Dōjunkai apartments.

introduced. The apartments ultimately fell into four architectural types, each framing interior courtyard space in a different way: *ichi-no-ji kei* (the bar type), *L-ji kei* (the L type), *ko-no-ji kei* (the C type), and *ro-no-ji kei* (the box type). They also experimented with a variety of different configurations within the units themselves, which they intended to be family-friendly while still cultivating a strong sense of community. The most basic unit contained a Japanese-style toilet, a kitchen, and two or more rooms of either 3 or 6 tatami mats. Deep Japanese-style closets were placed closest to the partitions between units while movable *fusuma* (Japanese sliding screens) inside the unit allowed for more ventilation and flexibility. Terraces or balconies were also commonly affixed to the units when possible. The visionary Dōjunkai apartments were highly experimental, exploring new materials, floor plans, and block layouts in order to accommodate a variety of lifestyles and family types, as this was an era of new ideas.⁶²

The Dōjunkai apartments paralleled a contemporary interest in the design of minimum dwelling units for the working classes in Europe, which was promoted through the 1929 CIAM 2 congress on the Minimum Dwelling at Frankfurt.⁶³ Uchida and Kishida were likely aware of the ideas presented at the congress through their student, Maekawa Kunio, as well as through Yamada Mamoru's lecture on "minimal existence dwelling" in July of 1930.⁶⁴ Maekawa worked under Le Corbusier from 1928 to 1930 after studying at Tokyo Imperial University and was also involved with the Maison Minimum presented at the conference.⁶⁵ The conference was largely concerned with developing the parameters and components of the minimum dwelling unit and Ernst May was at the forefront of this conversation, although it had been a matter of ongoing fascination since the late nineteenth century.⁶⁶ May was heavily engaged with this

⁶² Ibid., 21-23, 42, 53-55, 107.

⁶³ Eric Paul Mumford, *Defining Urban Design: CIAM Architects and the Formation of a Discipline, 1937-69* (New Haven: Yale University Press, 2009), 3.

⁶⁴ Ken Tadashi Ōshima, *International Architecture in Interwar Japan: Constructing Kokusai kenchiku* (Seattle: University of Washington Press, 2009), 63. Yamada participated in the 1929 CIAM 2 Congress and was a

⁶⁵ Kunio Maekawa, and Hiroshi Matsukuma, *Kenchikuka Maekawa Kunio no shigoto* [The work of Kunio Mayekawa: A Pioneer of Japanese Modern Architecture] (Tokyo: Bijutsu shuppansha, 2006), 155.

⁶⁶ Susan R. Henderson, *Building Culture: Ernst May and the New Frankfurt Initiative, 1926-1931*, Studies in Modern European History 64 (New York: Peter Lang, 2013), 401-402. In the early twentieth century, the ideas of minimum subsistence merged with those of welfare and the minimum dwelling as workers housing became a component through which society could be re-

discourse and the design of dwellings throughout his career, and like Uchida and Kishida, was tasked with addressing the 1920s housing crisis while economic hardship and material shortages placed pressure on his practice. May “married self-help construction to the rationalization of production,” producing his first minimal housing project in Breslau in 1924.⁶⁷ This laid the groundwork for his proposals at CIAM, where he would display a model of the *Existenzminimum* (minimum dwelling) in an exhibit that featured 207 different proposals. The design proposals for minimum dwelling at the CIAM 2 conference were heavily tied to concerns about the rising costs of rent, but thanks to May’s influence also made an effort to meet minimum biological needs, most notably “light, air, and openness.”⁶⁸ CIAM members hoped that by determining a scientific solution to the minimum dwelling that took into account safety, cost, and social requirements, they could present a solution to mass housing needs.⁶⁹ These ideas aligned closely with the goals of the Dōjunkai Foundation’s research arm, which hoped to develop cost-efficient, safe, and hygienic alternatives to the low-rise wooden nagaya that populated the Japanese city.

The legacy of the Dōjunkai Foundation as an institution was as important as the apartment prototypes that it produced. It was firmly rooted in the architectural culture of Tokyo Imperial University (present-day Tokyo University) that gave birth to Metabolism, one of Japan’s most famous architectural movements. Seng Kuan has shown that the Metabolist Movement has its origins in the “Rationalist School” established by Uchida Yoshizō and Sano Toshikata, both members of the Tokyo Imperial University faculty in the early twentieth century. He notes that while the school was rooted in “Japan’s appreciable need for earthquake-resistant and fireproof construction,” it was also heavily tied to the bureaucracy through its concern for “the social and urban aspects of its technologism,” a trend continued by the JHC in the postwar period.⁷⁰ In fact, Uchida, who had worked with the Dōjunkai Foundation, taught at Tokyo

engineered.

⁶⁷ Henderson, *Building Culture*, 19.

⁶⁸ Eric Paul Mumford, *The CIAM Discourse on Urbanism, 1928-1960*, (Cambridge, Mass: MIT Press, 2000), 30-34, 40.

⁶⁹ Ibid., 39.

⁷⁰ Seng Kuan, “Land as an Architectural Idea in Modern Japan,” in *Architecturalized Asia: mapping a continent through history*,

University along with Kishida Hidetō and was an important predecessor of postwar public housing. In 1938, Uchida was commissioned to work on collective housing projects in Daidō (Datong) along with Takayama Eika (who established the first urban planning department at Tokyo University in 1962 and whose research laboratory designed the master plan for Senri New Town).⁷¹ In the 1940s, Uchida and Kishida were also a part of the prewar left-wing avant-garde that played a role in the formation of the *Shin nihon kenchikuka shūdan* (New Architects Union).⁷² Uchida, Sano, and Kishida were important faculty members at Tokyo University, significantly shaping the education of prominent architects like Maekawa Kunio and Tange Kenzō.⁷³

The involvement of university faculty in the design of public housing prototypes continued during and after the war with subsequent generations of architects. The Harumi Apartments, designed more than two decades later for the newly established JHC, were emblematic of this collaboration between state-led public housing initiatives and academia. Maekawa Kunio, Ōtaka Masato—Maekawa’s project architect—and Takamasa Yoshizaka completed the Harumi Apartments in 1958 on reclaimed land in Tokyo Bay. As a case study commissioned by the JHC in 1955, it was the first large-scale public housing apartment building completed in Japan following World War II. The project was also “emblematic of a new approach to territorialization” in the aftermath of the war according to Kuan, and was symbolic of the idea of *jinkō toshi* (artificial land), an idea that detached the private from the ground plan in favor of the

ed. Vimalin, H. Rujivacharakul, Hazel Hahn, Ken Tadashi Ōshima, and Peter Christensen (Honolulu: University of Hawaii Press, 2013), 191-196. Members of the Metabolist movement included Tange Kenzō, Fumihiko Maki, Arata Isozaki, Kurokawa Kisho, Ōtaka Masato, Kikutake Kiyonori, and Asada Takashi. The Metabolist Movement had its origins in Tokyo University’s Rationalist School and drew upon principles of biological processes in its futuristic designs. It produced a number of utopian schemes, mostly notably Ōtaka’s 1959 marine proposal for Tokyo Bay, Tange’s Plan for Tokyo Bay in 1960, and Kikutake’s 1963 Marine City.

⁷¹ Carola Hein, “Machi: Neighborhood and Small Town—The Foundation for Urban Transformation in Japan,” *Journal of Urban History* 35, no.1 (11, 2008): 93.

⁷² Ishida Yorifusa, “Planning in the Reconstruction Period,” *Rebuilding Urban Japan after 1945*, ed. Carola Hein, Jeffrey M. Diefendorg, and Yorifusa Ishida (Houndmills, Basingstoke, Hampshire: Palgrave Macmillan, 2003), 19. Founded in 1947, the shortlived NAU unified many famous architects and planners, including Takayama Eika, Tange Kenzo, Nishiyama Uzo, and many others. It was disbanded in 1951.

⁷³ Jonathan M. Reynolds, *Maekawa Kunio and the Emergence of Japanese Modernist Architecture* (Berkeley: University of California Press, 2001), 46-47.

sky and relinquished it to the public.⁷⁴ (This was first proposed by Yoshizaka Takamasa in the 1950s.) In “Land as an Architectural Idea in Modern Japan,” Kuan suggests that this discourse may have been appealing to Ōtaka and ultimately important to Harumi’s design, as the project was constructed on artificial land in Tokyo Bay. Ōtaka also proposed a plan in 1958 that territorialized the bay and used the Harumi Apartment as its most basic urban component, which he arranged in a pinwheel formation around a community center to address multiple scales of living in a rational way.⁷⁵ While Ōtaka’s plan remained largely theoretical, he was later involved with some of the planning for Tama New Town, where he proposed a plan that integrated his rationally organized residential environment with the natural landscape of South Tama Hills.⁷⁶

The Harumi Apartments also took on larger theoretical issues, seeking to reconcile not only the dichotomy between the human and the machine, but also the relationship between the traditional and the modern in Japan.⁷⁷ The same year that Harumi was commissioned by the JHC, 1955, Kawazoe Noboru launched the *dentō ronsō* (tradition debate) with his publication “*Tange kenzō no nihonteki seikaku* (Tange Kenzō’s Japanese Character)” in *Shinkenchiku*, by situating Tange’s work within historical Japanese references, thereby sparking a conversation that “reexamine[d] Japan’s cultural patrimony” in architectural design.⁷⁸ Architects and architectural theorists in the 1950s and 1960s began to search for a national architectural language that fit with new democratic aspirations but was still somehow rooted in Japan’s own cultural heritage. Such concerns in architecture and planning reflected a larger debate about

⁷⁴ Kuan, “Land as an Architectural Idea in Modern Japan,” 180-190, 195-197. Yoshizaka and Maekawa had both worked for Le Corbusier, Maekawa from 1928 to 1930 and Yoshizaka from 1952 to 1953, when prototypes of the Unite d’Habitation were being constructed on the outskirts of cities around Europe

⁷⁵ Ibid., 196-197. As Kuan has shown, his proposal infilled Tokyo Bay, drawing upon the idea of *jinkō toshi* and elaborating on plans produced by Kanō Hisaakira at the JHC from 1957 to 1959. Kanō was the first president of the JHC, where he proposed a series of plans that would infill the bay using a nuclear bomb explosion, Ōtaka’s proposal was more delicate but no less ambitious. Drawing upon the Miliutin’s linear city model, he proposed a large belt that would line the inside of the bay. Ōtaka was later involved with the design of some portions of Tama New Town.

⁷⁶ This proposal was also not executed.

⁷⁷ Reynolds, *Maekawa Kunio and the Emergence of Japanese Modernist Architecture*, 160-161.

⁷⁸ Seng Kuan, *Tange Kenzo’s Architecture in Three Keys: As Building, as Art, and as the City* (Ph.D. Dissertation, Harvard University, 2011), 14-15.

a new national identity as the nation began to modernize and reimagine itself after ultra-nationalism, militarism, and defeat.⁷⁹ Harumi's response to the tradition debate was a fusion of a modernist megastructure with units shaped by more traditional concepts and elements. The structure of the building consisted of a massive steel and reinforced concrete megastructure into which groups of six units were plugged. Each group of units shared one circulation core and access corridor, which corresponded to the pattern of the megastructure and utilized a "skip-floor" system similar to the one at Unite d'Habitation.⁸⁰ Maekawa and Ōtaka placed an additional wooden frame inside of each of the reinforced concrete units, echoing the nesting relationship between the megastructure and the individual units. In order to make the tiny unit (32 or 42 square meters) feel more spacious, the team included *fusuma*, sliding doors, and clear glass, which, along with *tatami* and wood floors, created an atmosphere that alludes to *minka* (Japanese farmhouses). This created flexibility and openness in the space, a characteristic of traditional Japanese dwellings while the floors defined spatial separations.⁸¹ *Tatami* (straw-mat) flooring distinguished living space from service space, such as the bathroom and small kitchen, which were floored in wood, "recall[ing] the plans of Japanese farmhouses, which were typically divided into kitchen/service area with pounded earth floor and a raised living area."⁸² Public space, meanwhile, was allocated to the access corridors, roof garden, and ground plane, while dwellings were made rather private, particularly by placing storage space along the walls between two mirrored units. While Maekawa and Ōtaka emphasized the flexibility of the free plan and referenced motifs of traditional domesticity in the Harumi Apartments, seeking to "resolve the tension between 'traditional' and 'modern living' by combining complementary elements" within the units themselves, other prototypes emerged that took the opposite

⁷⁹ Zhongjie Lin, *Kenzo Tange and the Metabolist Movement: Urban Utopias of Modern Japan* (New York: Routledge, 2010), 18-19.

⁸⁰ Maekawa and Matsukuma, *Kenchikuka Maekawa Kunio no shigoto*, 148, 157. The "skip-floor" system brought residents by elevator to a shared semi-private landing every three floors. From there, the residents could take stairs up or down one level to their unit. This was a reference to Le Corbusier's Unite d'Habitation in Marseille.

⁸¹ Maekawa, and Matsukuma, *Kenchikuka Maekawa Kunio no shigoto*, 155-157; Reynolds, *Maekawa Kunio and the Emergence of Japanese Modernist Architecture*, 201-202.

⁸² Reynolds, *Maekawa Kunio and the Emergence of Japanese Modernist Architecture*, 207-208.

stance.⁸³ Others saw the flexibility as regressive and concerns about co-sleeping and a lack of functional zones within the dwelling prompted a different set of designs for the modern apartment dwelling that would eventually become the model for JHC housing units across Japan.

While Maekawa and Ōtaka sought to resolve the tension between tradition and modern living, others hoped to introduce new alternatives that would supplant any remnants of the past with new domestic technologies. During the interwar period and into the war, architectural theorist and reformist Nishiyama Uzō worked to develop an alternative to the flexible free plan of the traditional dwelling. An Associate Professor of Architecture at Kyoto University and former *Jūtaku eidan* (Housing Corporation) official, Nishiyama was not a part of the Rationalist School. He published his influential thesis, *Shokushin bunri ron* (Thesis on the Separation of Eating and Sleeping) in 1942, proposing a theoretical system for residential planning that outlined a framework for the minimum dwelling in Japan and heavily influenced housing policy in the 1950s and 1960s.⁸⁴ His theories were in stark opposition to traditional patterns of flexibility and modern patterns of the free plan, but would ultimately dramatically alter the landscape of Japanese postwar domesticity. He derived his system from house-to-house surveys of living conditions that his research studio conducted during the war. Addressing issues of scale, housing type and form, location, and structure, Nishiyama firmly rooted his theoretical systems in these surveys, which he believed suggested a strong demand for separate spaces. He asserted that the modern Japanese family desired the separation of sleeping space from eating space, an argument that countered views that lauded traditional Japanese dwellings for their flexibility.⁸⁵ Viewing the traditional dwelling with hygienic and moral skepticism, he lamented that limited space within urban dwellings such as *nagaya* resulted not only in co-sleeping, but also the use of a single room for multiple functions, such as sleeping, eating, and other

⁸³ Ibid., 202-204, 208.

⁸⁴ Shigebumi Suzuki, *Sumai no keikaku, sumai no bunka: suzuki shigebumi jūkyō ronshū* [The Design of Dwelling, the Culture of Dwelling: Suzuki Shigebumi's Treatise on Dwelling] (Tokyo: shōkokusha, 1988), 22.

⁸⁵ Sand, *House and Home in Modern Japan*, 375-376; Inagaki, *Nihon no kindai kenchiku*, 333; Suzuki, *Sumai no keikaku, sumai no bunka*, 22.

daily activities.⁸⁶ Instead, Nishiyama concluded from his surveys that while parents and children typically slept in the same room when the children were young, there was a need for a layout that allowed for “bedroom disassembly,” where the bedroom could be divided in two as the children grew older, increasing their privacy, as well as their parents.’⁸⁷ This thinking belonged to a contemporary push towards moral reform, which saw co-sleeping as “anathema in the ‘advanced nations of the West,’” and provoked concern about privacy and embarrassment in how the West might view Japan, although it was not particularly related to Victorian derived ideas of morality and sexuality.⁸⁸ A “single spatial principle [that] served as a ‘national dwelling’ (*kokumin jūtaku*) model,” Nishiyama’s plan reflected both the hygienic and moral concerns of the postwar period.⁸⁹

Issues of national identity were closely intertwined with the construction of domestic space in the postwar period, fueling the ongoing “tradition debate” within the architectural community.⁹⁰ As the architectural community grappled with these issues in projects like the Harumi Apartments, the Japanese state looked for models for the “national dwelling.” Article 25 of the Japanese Constitution, promulgated in 1946, stipulated that “all people shall have the right to maintain the minimum standards of wholesome and cultured living” and that “in all spheres of life, the State shall use its endeavors for the promotion and extensions of social welfare and security, and of public health,” underpinning the importance of developing a national minimum standard for dwellings.⁹¹ For a defeated nation left in shambles, this was not an easy task. Contemporary with Nishiyama’s work, state intervention in dwelling began to transform during the war with the establishment of a new Welfare Ministry, which included a Housing Section in its Social Bureau, in 1938 that was responsible for improving the quality and availability of dwellings for the

⁸⁶ Waswo, *Housing in Postwar Japan*, 64-66.

⁸⁷ Shigebumi Suzuki, “51C” *kazoku o ireru hako no sengo to genzai* [“51C” The Box in which Families are Put, Before the War and Today], (Tokyo: Heibonsha, 2004), 13.

⁸⁸ Waswo, *Housing in Postwar Japan*, 68.

⁸⁹ Sand, *House and Home in Modern Japan*, 375.

⁹⁰ Reynolds, *Maekawa Kunio and the Emergence of Japanese Modernist Architecture*, 196.

⁹¹ Taira, “Dialectics of Economic Growth,” 175.

industrial workers necessary to fuel a state of war. In 1941, the government passed the Rented Building Association Law and established the short-lived *Jūtaku eidan* (Housing Corporation) to provide relief to the private housing sector in the wake of rent controls and material shortages, providing dwellings in industrial districts and in its colonies.⁹² Nishiyama's proposals appealed to the needs and desires of the postwar state more than traditional dwellings, promising to ease the mass production of minimal housing units and components.

In addition to the sheer convenience of Nishiyama's ideas, national identity itself was also at stake. By the time the short-lived leftist New Architect's Movement (NAU) was formed in 1947, "non-democratic" vestiges of the pre-war past were regarded with a considerable degree of skepticism, and a preference for functionalism and modernity replaced the indigenous and traditional.⁹³ In 1947, the Supreme Commander for the Allied Powers (SCAP) disbanded the Housing Corporation on grounds that it was a mechanism of Japan's imperialistic machine and intervention in the housing market stalled while Japan turned its attention to economic recovery following the war.⁹⁴ It was not until 1950 that Japan began systematically to address the growing housing problems facing its urban dwellers, establishing the Japan Housing Loan Corporation in 1950 to supplement the cost of construction to individuals. The following year, the *Kōei jūtaku hō* (Public Housing Law) was passed, financing the provision of dwellings to low-income households through local subsidies to foster homeownership and address the immediate needs of low-income earners.⁹⁵ In search of a means to renegotiate domestic space, and with it national identity, the state relied on newly emerging models of the minimum dwelling.

⁹² Waswo, *Housing in Postwar Japan*, 45. Nishiyama served as an official for the Housing Corporation.

⁹³ Inagaki, *Nihon no kindai kenchiku*, 333; Reynolds, *Maekawa Kunio and the Emergence of Japanese Modernist Architecture*, 138. The NAU, which was founded in 1947, sought to "construct architecture for the people and create a people's architectural culture" as a way to aid the rebuilding of the nation. Intensely progressive, they sought to distance themselves from feudal or imperial architectural practices in favor of modernity and technology that would be used for the good of the people. Uchida and Kishida were a part of this movement.

⁹⁴ Waswo, *Housing in Postwar Japan*, 46.

⁹⁵ *Nihon jūtaku kōdan*, *Outline of the Japan Housing Corporation*, 1, and Waswo, *Housing in Postwar Japan*, 52.

In the early 1950s, the Yoshitake Yasumi Laboratory at Tokyo University built upon Nishiyama's theories, producing the "51C Apartment" that would become the archetypal dwelling in postwar Japan.⁹⁶ The 51C Apartment (which stood for "1951 Type-C" Apartment) took a stance on the tradition debate more in line with Nishiyama's thesis than with the Harumi Apartments, completely discarding any indigenous elements in the home. It was to become the public housing prototype for many of the mass-housing units later constructed by the JHC and local public housing agencies and successfully implemented the lifestyle reforms envisioned by Nishiyama and his team. Suzuki Shigebumi, an architect who participated in the Yoshitake Laboratory as a graduate student in the early 1950s, has written extensively on the development of the 51C Apartment.⁹⁷ The project began with a proposal based on nearly four years of 'Lifestyle Research' that built on Nishiyama's work, as well as the contemporary housing theories pioneered by architect Miho Hamaguchi.⁹⁸ It was first submitted to the Public Housing Committee in 1951. The design, which followed a series of earlier designs developed in 1950, consisted of two bedrooms divided by fixed walls rather than *fusuma*, a kitchen equipped with a modern kitchen unit and large enough for dining to take place (later called the dining-kitchen), a toilet, closets, and a balcony.⁹⁹ While three main types, the 16-*tsubo* (two mat area) A-type, 14-*tsubo* B-type, and 12-*tsubo* C-

⁹⁶ Suzuki, "51C" *kazoku o ireru hako no sengo to genzai*, 4.

⁹⁷ Seng Kuan and Yukio Lippit, eds, *Kenzo Tange: Architecture for the World*, (Baden : London: Lars Müller ; Springer, 2012), 15. Research laboratories at Tokyo University were quite important during the postwar period and were able to contribute a great deal to urban planning and architecture in the modern period. Kuan points out that Tange's laboratory occupied a place of convergence between "design and research, art and engineering," producing a number of influential architects and urban proposals. Senri New Town was planned in a similar setting, in Takayama Eika's laboratory at Tokyo University. Yoshitake's laboratory, also at Tokyo University, similarly contributed to the development of public housing prototypes through both research studies and design proposals.

⁹⁸ Suzuki, "51C" *kazoku o ireru hako no sengo to genzai*, 13; Usui, *Marketing and Consumption in Modern Japan*, 152; Neitzel, *Living Modern*, 46. Kitagawa Keiko credited Hamaguchi Miho with the invention of the dining-kitchen, notably its stainless steel sink, which she traced back to the German *Wohnküche* (living kitchen) in her 2002 book *Dainingu kitchin wa kōshite tanjōshita : Josei kenchikuka dai ichigō hamaguchi miho ga mezashita mono* [The Process of the Birth of the Dining-kitchen: What Miho Hamaguchi, the First Female Architect, Aimed at]. Hamaguchi, who was married to Hamaguchi Ryūichi, a prolific architectural writer who graduated from Tokyo University, served as an advisor to the JHC and was familiar with the work of Le Corbusier. Hamaguchi was particularly concerned with the "feudal" hierarchies of the prewar kitchen and sought to democratize the home and the family through the dining-kitchen.

⁹⁹ Suzuki, "51C" *kazoku o ireru hako no sengo to genzai*, 15. Suzuki drew a plan in 1950 that consisted of two Japanese-style rooms and a large kitchen to address the issues brought up by Nishiyama's research. Fixed closets separate bedrooms, situated in the north part of the dwelling. Both open south into the large kitchen area, which has a balcony and an adjacent toilet. An access staircase was located on the north façade, leading to two dwellings on each floor. Yoshitake's 1950 design added space for messy work and bathing on a service balcony. The bedrooms, which are stacked north-south rather than east-west along the

type, were initially proposed, the committee chose layout C for further development in public housing estates. Two variations resulted: a south entry 51C-S layout and a north entry 51C-N layout. Because the separation of all functions was impossible in the tiny 12-*tsubo* (35 square meters) area of the 51C, the Yoshitake Laboratory carefully distinguished between functions that should be overlaid and those that should be separated, carrying out rigorous studies to determine the floor layout. The most important separation was between the eating and sleeping space. The early separation of the kitchen grew out of the desire for families to be able to eat together at night and for family members commuting to work or school to be able to eat away from sleeping areas at breakfast, necessitating the enlargement of the kitchen in order to make space for Western-style table and chairs. Thus, the team was able to overlay the functions of cooking and eating while still separating it from sleeping. Furthermore, as separate bedrooms for parents and children were viewed as more wholesome at the time, a clear separation between the two bedrooms was preferred. Because the layout was composed of both a 4.5-mat bedroom and a 6-mat bedroom, the Laboratory conducted studies to determine which configuration of rooms would best reinforce the principle of separation between eating and sleeping. They discovered that, out of convenience, people prefer to eat in the room closest to the kitchen. Because of this, they determined that it would be better if the smaller 4.5-mat bedroom was adjacent to the kitchen, rather than the larger 6-mat room, which was easier to divide up for sleeping purposes, ironically resulting in a decay of a clear division between eating and sleeping within the dwelling.¹⁰⁰ This prioritization of the division of functions within the home reflected the 51C Apartment's clear stance on reform and would come to define the direction of national identity within the postwar dwelling.

The domestic paradigms embedded in the 51C Apartment prototype set a standard for mass housing within a decade, primarily because it became a key prototype of the newly formed Japan Housing

northern façade, are separated by a partition wall and the closets are located in the northern corner of the plan. The toilet was much smaller than in Suzuki's plan, as is the kitchen, which is about half the size. Meanwhile, the *genkan* (entryway) appeared larger, as it neighbored a closet.

¹⁰⁰ Ibid., 8, 14, 23-24.

Corporation (JHC). The JHC, established in 1955 by socialist Prime Minister Hatoyama embodied the role of the developmental state in improving housing conditions for Japan's growing middle class. It was the first and primary organ of the government to focus exclusively on the production of dwellings for middle-class workers, and by doing so was able to effect profound change in patterns of everyday living through the construction of housing estates, new towns, and supporting facilities. Over the following two decades, it would construct nearly a million dwellings.¹⁰¹ Kelly points to a larger pattern of standardization and rationalization of society at the time that paralleled the development of the JHC, writing that postwar Japanese society was "idealized and routinized [the rhythms of life experiences] by three broad institutional arenas—the workplace, the household, and the school," having significant impacts on family structure.¹⁰² By standardizing and rationalizing the layout and construction of the dwelling through the JHC, the state was not only able to mass-produce housing to address the postwar housing crisis and establish a baseline for the minimum dwelling; it fundamentally altered patterns of daily life for the middle class through architecture.

The prototype used by the JHC, a derivative of the 51C Apartment that was nicknamed the nDK Apartment (*n* referred to the number of rooms, DK to dining-kitchen), took a radical design approach to public housing that was both modernist and Westernized, provoking some opposition in the Diet. At the time, the Diet was primarily concerned not only with the cost of construction, but also with the potential loss of the *yamato damashii* (Japanese spirit) in everyday life. Despite this, Hatoyama's goal to construct large quantities of safe and sanitary modern housing took precedence over the concern for nostalgia or tradition, which reflected the growing power of the conservative elite that corresponded with the return of many purged bureaucrats to the government in the late 1940s.¹⁰³ Hatoyama modeled the JHC after the

¹⁰¹ The Japan Housing Corporation, *Japan Housing Corporation and its Achievements* (Tokyo: Japan Housing Corp, 1976), 9, 13.

¹⁰² Kelly, "Metropolitan Japan," 203.

¹⁰³ Nihon jūtaku kōdan, *Outline of the Japan Housing Corporation*, 6; Dower, "Peace and Democracy in Two Systems," 15. Hatoyama, who became prime minister in 1954 after organizing the Democratic Party (a rival of the Liberal Party that merged to form the Liberal Democratic Party (LDP) in 1955), was also conservative and had himself been purged during the occupation.

state-run housing agencies in Europe that shared the goal of producing large quantities of affordable dwellings, particularly in new towns, in the aftermath of the war. Contemporary agencies included the Ministry of Works and Planning established in 1942 to build the new towns of Sir Patrick Abercrombie's Greater London Plan 1944 (it replaced the 1937 Barlow Royal Commission) and Stockholm's Building Board, a part of the City Council responsible for overseeing the plans for Vällingby.¹⁰⁴ Stockholm saw the provision of "adequate housing [as] a municipal responsibility" much like Hatoyama did, purchasing the real estate company AB Svenska Bostäder in 1947 and establishing it as a "public-owned-developer-management company" that would manage the development and construction of Vällingby.¹⁰⁵ As a semi-public agency, the JHC was funded, somewhat inadequately, by a combination of public funds and investments made by the national and local governments, as well as a number of sources, including insurance companies and banks, easing any taxpayer burden.¹⁰⁶ In addition to the formation of the JHC, 1955 proved to be a landmark year for Japan, marking "the open wedding of big business with Japan's right-of-center politicians," which solidified the immense power of the bureaucracy as Japan's economy took off and MITI propelled the nation into an age of consumerism with the "citizen's car project."¹⁰⁷ Together with the JHC, Hatoyama proved to be a powerful force in this context, taking measures to strengthen control of the Japanese state and fulfill his election promise of "solving the housing shortage in 10 years" by building over 400,000 dwelling units.¹⁰⁸

Although the JHC was never adequately funded, it had a profound influence on Japan's urban landscape through the development of the NDK Apartment and the sheer scale of its construction. It also had a

¹⁰⁴ Pierre Merlin, *New Towns: Regional Planning and Development*, (London: Methuen, 1971), 3-4; David Pass, *Vällingby and Farsta--From Idea to Reality; The New Community Development Process in Stockholm*, (Cambridge, Mass: MIT Press, 1973), 41-42. The Ministry of Works and Planning was renamed the Ministry of Town and Country Planning in 1943, and the Ministry of Housing and Local Government in 1951.

¹⁰⁵ Pass, *Vällingby and Farsta--From Idea to Reality*, 65-70.

¹⁰⁶ Nihon jūtaku kōdan, *Outline of the Japan Housing Corporation*, 18-19; Waswo, *Housing in Postwar Japan*, 52. For example, in 1970, 2.2 billion dollars came from private loans and 1.2 billion from government loans. Only 217 million dollars came from governmental funds, and 16 million from interest revenues.

¹⁰⁷ John W. Dower, "Peace and Democracy in Two Systems," in *Postwar Japan as History*, ed. Andrew Gordon, (Berkeley: University of California Press, 1993), 16-17.

¹⁰⁸ Waswo, *Housing in Postwar Japan*, 55.

pervasive presence, establishing several headquarters, including two in Tokyo and one each in Osaka, Nagoya, and Fukuoka. The JHC carried out a number of activities that contributed to the development of the nation, namely “the construction and management of rental dwellings, the construction of dwellings for sale, the redevelopment of old built-up areas with new dwellings, the development of land for large-scale projects, and the construction of public and community facilities.”¹⁰⁹ These activities resulted in the delegation of the corporation into three different Bureaus: the National Capital Region Land Development Headquarters, the Minami Tama Development Bureau, and the Academic City Development Bureau. Smaller managing offices, which collected rent and managed repair and maintenance, were set up for groupings 10,000 dwelling units each. From the perspective of conservative goals to reform domesticity, develop industrial areas, and modernize the state, the JHC was remarkably successful in its endeavors. By 1960, it eliminated most cases of homelessness or cohabitation (one of its primary goals) and by 1970 had constructed over 500,000 new dwellings across 18,600 hectares.¹¹⁰ When the “absolute housing shortage in all parts of Japan” ended in 1973, the JHC had completed 810,000 dwelling units (290,000 for sale and 520,000 for rent) throughout Japan and established a new mode of modern domesticity.¹¹¹

While the JHC had basically one job—to construct large housing estates quickly and affordably under the “one family one dwelling” mantra—its goals and principles suggest that it was also attempting to reconstruct the Japanese urban and suburban landscape into a modernist one defined by a new set of social principles. Factors such as budget, structural integrity, fireproof performance, hygiene, and safety were a given in public housing designed by the JHC.¹¹² During the 1950s and 1960s there was also considerable pressure for housing that coincided with desired social shifts, rising incomes, changing urbanization patterns, and new lifestyle ideals based on health, culture, individualism, and democracy,

¹⁰⁹ Nihon jūtaku kōdan, *Outline of the Japan Housing Corporation*, 19.

¹¹⁰ Nihon jūtaku kōdan, *Outline of the Japan Housing Corporation*, 1, 20; Nihon jūtaku kōdan, *Nihon jūtaku kōdanshi*, 18, 25.

¹¹¹ Waswo, *Housing in Postwar Japan*, 58; Shinzo Kiuchi and Noboru Inōchi, “New Towns in Japan,” *Geoforum* 7, (01, 1976): 3.

¹¹² Nihon jūtaku kōdan, *Nihon jūtaku kōdanshi*, 9.

particularly from the oppositional left.¹¹³ This resulted in the increasing fragmentation of the traditional family into nuclear families, new concerns about household and individual privacy, and the redefinition of daily life patterns that codified gender and family roles within the architecture of the home. Furthermore, traffic congestion, water shortages, industrial pollution, and inferior and decrepit housing forced the JHC to take a stance on the urban environments it was trying to construct.¹¹⁴ For the JHC, all of these aspects had to be addressed through the construction of radically new environments for the middle class that embodied a sense of modernity and quality of life. The JHC affected enormous change on the landscape of domesticity through the mass construction of *danchi* (housing estates) in cities, suburbs, and new towns across the nation.

Despite the JHC's best efforts, *danchi* were not always conceived of as positive. Unraveling a discourse that hailed the *danchi* as democratic and progressive, historian Laura Neitzel shows how they went from being the "epitome of 'modern living' (*modan ribingu*)" to the "emblem of substandard living conditions and middle-class betrayal" in her Ph.D dissertation at Columbia University, *Living Modern: Danchi Housing and Postwar Japan*.¹¹⁵ While *danchi* had certainly existed before the founding of the JHC, it was the JHC *danchi* that Neitzel links to standardization of middle-classness in the 1950s and 1960s, which was a result of the prototype of modern middle-class living created by the JHC to "secure a constituency" for its projects.¹¹⁶ Hoshino Ikumi's 1964 article "Apartment Life in Japan" in the *Journal of Marriage and the Family* describes this newly emerging demographic that populated the *danchi*:

All the studies of *danchi* so far conducted point to the striking homogeneity of *danchi*-dwellers in terms of age, family structure, occupation, income, education, standard of living... A demographic survey of the Japan Housing Corporation apartment-dwelling conducted in February 1961 showed, for instance that males from 26 to 40 years old and

¹¹³ Dower, "Peace and Democracy in Two Systems," 19.

¹¹⁴ Nihon jūtaku kōdan, *Nihon jūtaku kōdanshi*, 25-26.

¹¹⁵ Neitzel, *Living Modern*, 2.

¹¹⁶ *Ibid.*, 40-41.

females from 21 to 35 years old were predominant and they, together with children under 11 years of age, accounted for about three-quarters of the total danchi population.¹¹⁷

Hoshino attributes this homogeneity to smallness of the apartment units, as well as the financial hurdles of procuring a danchi apartment for young middle-class households, which would need a higher-than-average income and therefore a college education to qualify.¹¹⁸ Large blocks of monotonous and repetitive apartment buildings, frequently set within a drab lawn-covered landscape, came to characterize JHC danchi, although the JHC also experimented with the inclusion of public amenities like landscaping, benches, and play lots. The JHC's own history book, *Nihon jūtaku kōdanshi* [History of the Japan Housing Corporation] published in 1981, indicates throughout its narrative that when afforded the opportunity, it did consider public and community life to be an important part of housing estates, even though the result was often banal. In fact, as demand for open space grew, it began to supply public space, such as tennis courts, between apartment buildings, often with small private gardens for residents on the first floor.¹¹⁹ Nevertheless, JHC danchi came to be associated with modern a lifestyle crafted, and in many ways confined, by the discourses of the 1950s and 1960s.

Inside the dwelling, the JHC pursued novelty in its designs, pushing lifestyle reform on its residents through new technologies of living, particularly through the refinement of the 51C Apartment into the 2DK Apartment.¹²⁰ Asserting that “with the construction of Corporation’s housing in 1956, a new form of living was introduced to Japan,” the JHC describes its primary principles in its *‘70 Outline of the Japan Housing Corporation*: “The Corporation’s housing adopts the traditional system of ‘Tatami’ and ‘Fusuma,’ but adds new aspects such as; (1) Collective Housing (apartments) made of fire-proof ferroconcrete material. (2) Eating and sleeping areas are separated, and a table and chairs are introduced

¹¹⁷ Ikumi Hoshino, “Apartment Life in Japan,” *Journal of Marriage and Family* 26, no.3 (08, 1964): 313, accessed January 27, 2015, <http://www.jstor.org/stable/349462>.

¹¹⁸ Ibid, 313.

¹¹⁹ *Nihon jūtaku kōdan*, *Nihon jūtaku kōdanshi*, 108.

¹²⁰ Neitzel, *Living Modern*, 43. These refinements included adding one-tsubo of space to the 51C, as well as a stainless steel sink, private bath, bedroom, and balcony in order to appeal to the middle-class.

in the eating area. (3) Bath and toilet facilities became more convenient and westernized.”¹²¹ Waswo and Neitzel both point out that JHC projects not only pioneered the standardization and modernization of mass housing, but also “became a major testing ground for new building materials and techniques, including the off-site production of housing elements.”¹²² The standardization of dwellings units, designed to fit easily into repetitive steel or reinforced concrete slab buildings, shaped everything from the floor layout to the appliances and interior components, easing their dissemination throughout Japan. The nDK Apartment departed from the prewar dwelling that often lacked private bathrooms and toilets, and still necessitated the practice of co-sleeping. Except for dwellings of the prewar bourgeoisie, few households had yet converted to the coveted *chair lifestyle* of the west, instead sitting on floor cushions around low, movable tables for daily activities such as eating and studying.¹²³ As most rooms in traditional dwellings were multifunctional, light, packable furniture was used in lieu of the fixed heavy furniture found in the West, making it easy to shift activities throughout the day. Because it was not easily moved, the introduction of the dinette set in the postwar period helped to maintain the separation of eating and sleeping spaces advocated by Nishiyama and the Yoshitake Laboratory. In fact, the JHC even provided dining tables on loan to its residents in its early years in order to encourage lifestyle reform.¹²⁴ Such intervention within the dwelling unit itself, not only on the layout, but also on its furnishings and uses, indicating how pervasive ideas of reform were at the time. These priorities made the 2DK Apartment a logical choice as a standard model.

The nDK Apartment transformed the space of everyday living in the housing estates built by the JHC. The dining-kitchen became the centerpiece of the modern apartment as a space exclusively for the

¹²¹ Nihon jūtaku kōdan, *Outline of the Japan Housing Corporation*, 30.

¹²² Waswo, *Housing in Postwar Japan*, 57; Neitzel, *Living Modern*, 20-21.

¹²³ Waswo, *Housing in Postwar Japan*, 68-69. Furniture in traditional dwellings was often light and movable, stored in large built-in cabinets. This made it possible for a space to be used for multiple functions, as furniture could be changed throughout the day. Sitting on the floor on small cushions contributed to this flexibility. Western furniture necessitated a change in dwelling habits, as it was often heavy and hard to move. Tables were also higher and used chairs rather than floor cushions, dramatically changing how the space of the dwelling was used.

¹²⁴ Nihon jūtaku kōdan, *Nihon jūtaku kōdanshi*, 15.

production and consumption of food. The linoleum or wood floors in the new dining-kitchen, rather than traditional *tatami* floors, distinguished it from bedrooms and further encouraged the use of dinette sets by making traditional floor sitting uncomfortable.¹²⁵ Appliances also began to fill the home, particularly in the dining-kitchen, which included a standardized kitchen unit. The JHC was the first developer to introduce stainless steel sinks, stainless steel doors, and cylinder locks in the apartment, making them safer and easier to maintain. Flushing Western-style toilets (as opposed to the Japanese style toilets of the Dōjunkai), bathtubs (made possible by JHC water heater specifications), and washing sinks were also placed directly in the apartment.¹²⁶ These new technologies symbolized the hygiene and convenience of the modern lifestyle, introducing efficiency into the homes of the middle-class.

The nDK Apartment became a vessel for the middle-class and the growing number of goods purported to define them. The introduction of new technologies into the postwar home coincided with an explosion of goods on the market targeted towards professional middle-class housewives, such as canned and processed food, hams, sausages, instant foods, western clothing, and durable goods such as TVs, cameras, electric washing machines, refrigerators, and vacuums.¹²⁷ Toasters, electric kettles, stovetop ranges and other appliances began to occupy valuable space in the dining-kitchen, offering both convenience and status to the housewives. As families grew richer and acquired more goods, however, this put pressure on the original 2DK Apartment by the 1960s. Small everyday items were not the only new goods to enter the home. Families also began to acquire more storage cabinets, pianos, sofas, and other large furniture pieces, making the 2DK quite cramped. The young middle-class families to which the JHC units were targeted quickly outgrew the 2DK type, which also proved to be insufficient in providing privacy for family members as children grew older. In response to this the JHC began diversifying apartment types by the late 1960s. As standardization had become the norm, most developers simply stuck to the nDK

¹²⁵ See Ann Waswo, "Chapter 4: Toward a Lifestyle Revolution," *Housing in Postwar Japan: A Social History*, (London: Routledge Curzon, 2002), 62-85.

¹²⁶ Nihon jūtaku kōdan, *Nihon jūtaku kōdanshi*, 9.

¹²⁷ Ōsakafu, *Senri nyūtaun no kensetsu*, 2.

model, adding various arrangements of bedrooms and eventually a living to create what is today referred to as the nLDK apartment system (the added L refers to the living room).¹²⁸ While the most common apartment types produced by the JHC in their early projects were the 1DK, 2K, 2DK, 3K, and 3DK, by the late 1970s a number of variations, such as the 4LDK, became increasingly common in housing estates and new towns across Japan.

While standardized apartment units allowed the JHC to meet its goal of expediently constructing hundreds of thousands of dwellings in the postwar period, a number of issues arose that continue to plague JHC housing estates to the present day. The nLDK apartment type was designed to foster and accommodate a modern lifestyle but ultimately failed to reconcile traditional Japanese modes of living with Western ones. Waswo points out the irony here, noting that the *chair lifestyle* “proved costly in terms of space,” as the limited storage and the fixed layouts of these dwellings required the purchase of additional furniture and made the already small rooms even more cramped.¹²⁹ In contrast, traditional Japanese dwellings easily accommodated multiple activities within a single space through the use of removable fusuma screens and storable, light-weight furniture. The original 12-*tsubo* plan of the 51C Apartment, and even many of the larger 2DKs built in the 1960s, simply proved too small, even for a family of four. Suzuki, who had participated in the original design, lamented that the division of rooms was actually too severe, resulting in an unwelcoming living environment. Research carried out by the Yoshitake Laboratory confirmed these trends, indicating that while 80-90% of Japanese families used the dining-kitchen for dining, habits also varied considerably amongst the classes. The separation of bedrooms, however, proved to be less successful, as the northern bedroom would often be too cold in winter for use and the southern one uncomfortable in summer. *Sararimen* were more likely to fully adopt the envisioned lifestyle than industrial workers, reiterating the need for a more thorough study of social

¹²⁸ Suzuki, “51C” *kazoku o ireru hako no sengo to genzai*, 24-28.

¹²⁹ Waswo, *Housing in Postwar Japan*, 126.

class, family structure, and living style.¹³⁰ William W. Kelly supports this assertion, noting that there was a disconnect in postwar Japan between the national ideal that “valorize[ed] serious students, diligent corporate workers, and paired householders...to define standards of achievement, images of the desirable, and limits of the feasible” and the more diverse and nuanced realities of Japanese everyday life.¹³¹ The excessive standardization of these dwellings also resulted in bleak urban and social landscapes, as well as deadened architectural features, such as small grated windows, barricade-like steel doors, and nascent community space.¹³² The arrangement of units in repetitive slab buildings afforded no opportunity for casual encounters between neighbors and offered little public space for community activities. As standardization became the dominant principle of public housing in Japan, the role of the human being as a social creature within both the dwelling and outside of it rapidly evaporated.

Since the 1920s when the Dōjunkai Foundation first introduced modern public housing prototypes to Japan, public housing provision has played an important role in shaping the discourse of the nuclear family and modern living. Through its experimental apartment prototypes, the Dōjunkai Foundation set a precedent for state involvement in housing provision and innovation that dovetailed with theories and models produced by the university, most notably Tokyo Imperial University’s Department of Architecture. Public housing provision became a means through which new materials, construction techniques, and dwelling layouts could be tested and introduced; it also became a technology through which the state would construct the lifestyle of the newly imagined middle-class. As Japan began to reconfigure its social, political, and urban landscape in the aftermath of World War II, it sought to redefine and reposition itself within the postwar world. A new domestic paradigm—one entangled with the rapid suburbanization of the urban fringe and new democratic and capitalist aspirations—emerged in response to the environmental and housing crises that held Japan’s cities back while economic and

¹³⁰ Suzuki, *Sumai no keikaku, sumai no bunka*, 24-25, 32.

¹³¹ Kelly, “Metropolitan Japan,” 203.

¹³² Suzuki, “51C” *kazoku o ireru hako no sengo to genzai*, 24, 29.

industrial growth accelerated. This affected change not only on the city, but the interior of the dwelling itself, which was reimagined by the modernist designs of Nishiyama Uzō and the Yoshitake Laboratory, and homogenized by standardized consumer goods and appliances. Through the apparatus of the JHC and the technology of the modern dwelling, the Japanese state reconfigured the landscape of modern domesticity. As the JHC worked to construct nearly a million dwellings units across the nation, public housing became a means through which the state could instigate change across Japan's social and physical landscape; but the postwar new town offered something even more than the modern dwelling or the danchi (housing estate) ever could. A visionary technology of the state, the postwar Japanese new town drew upon the principles of the global new town movement to create a fully-designed residential environment that was filled with the most state-of-the-art dwelling units arranged within a spacious and sunny landscape and constructed around the daily patterns of the ideal middle-class family. Through the new town, Japan could do more than solve the housing crisis, it could offer a glimpse of what it hoped the nation and its people would become.

Chapter 5: Senri New Town

Historically a mercantile city and Japan's leading industrial city in the postwar period, Osaka, the "Capital of Smoke," was the first major city in Japan to experiment with building a residential new town as a means of managing suburbanization and stemming the housing crisis.¹ Senri New Town, located in the northern suburbs of Osaka, was a model of the Western-style postwar new town and offered an antidote the drudgery of the industrial city. Like other major cities across the country, Osaka was plagued with overcrowding, cohabitation, and homelessness, and by 1963, still faced a housing shortage of 379,000 dwellings (27.3% of Osaka households).² Much of the housing that was available was small, dark, and dilapidated; additionally, many lower and middle-income renters had limited access to water or sewerage services and no access to public green space, even in newly constructed suburban areas. Heavy pollution, long commutes, and high rents placed additional pressure on urban dwellers, pushing them to the fringes of the city. Reconstruction plans were proposed for the city by prominent figures like Kobayashi Ichizō and Nishiyama Uzō, but even the officially sanctioned plans of Kōzu Toshihisa remained mostly a dream.³ When Senri New Town was first proposed by Osaka Prefecture in 1955, it drew upon the unattained visions of for city, particularly Nishiyama's, and modeled itself after Western new towns and American garden suburbs, using the neighborhood unit as its fundamental building block.

¹ André Sorensen, *The Making of Urban Japan: Cities and Planning from Edo to the Twenty-First Century*, (London: Routledge, 2002), 202.

² Ōsakafu (Japan: Prefecture), *Senri nyūtaun no kensetsu* [The Construction of Senri New Town], (Ōsaka: Osaka Prefectural Government, 1970), 75; Senri nyūtaun sōgō hyōka ni kansuru chōsa kenkyū inkai, *Senri nyūtaun no sōgō hyōka ni kansuru chōsa kenkyū* [Investigative Study for the Senri New Town Comprehensive Evaluation] (Ōsakafu: Jūtaku toshi seibi kōdan, Ōsakafu jūtaku kyōkyū kōsha, Osaka jūtaku sentā, Osaka senri sentā, 1984), 8. Osaka's housing stock dropped 38% from 950,000 dwellings (-370,000 dwellings) during the war.

³ Junichi Hasegawa, "The Rebuilding of Osaka: A Reflection of the Structural Weaknesses in Japanese Planning," in *Rebuilding Urban Japan After 1945*, ed. Carola Hein, Jeffry M. Diefendorf, and Ishida Yorifusa (Houndmills, Basingstoke, Hampshire: Palgrave Macmillan, 2003), 68-73, 77-78.

As the first state-sponsored residential new town project, Senri New Town would be the product of a collaboration between the Osaka Prefectural Government, the Japan Housing Corporation, and research institutions. The site for Senri New Town, chosen for its proximity to the city and for its natural beauty lent a garden-city quality to the residential environment, which was structured within a “cluster system” that organized neighborhood units and their components into a hierarchy correlated with the imagined lifestyle patterns of the middle-class family. Pedestrianized district centers and neighborhood shopping centers, a legacy of postwar CIAM, provided access to amenities and civic space and anchored the neighborhood units, which were enhanced by a luxurious green infrastructure made up of parks and pedestrian pathways.⁴ The dwelling itself was equally important, and large homogenous blocks of multi-family apartments and single-family homes showcased the most modern dwelling prototypes, and in them the newest technologies and appliances available. Senri New Town promised to be a refuge from the perpetual chaos and grit of the industrial city, providing much-needed housing for the region within the ideal residential environment. In doing so, it also created a model for new middle-class living in Japan on the scale of the city, the district, and dwelling.

The Scope of Senri New Town and its Role in the Osaka Region

Senri New Town was constructed at a time when Osaka, the leading industrial city in Japan during the postwar period, was nicknamed the “Capital of Smoke” and the city faced a daunting housing and environment crisis that prompted the prefectural government to consider new town planning as a means of managing urban growth.⁵ After World War II ended, Osaka began reconstruction efforts that attempted to address the worsening housing crisis, correct the sinking land throughout the city, and rebuild Osaka’s industrial prowess. Over 27% of its urban area had been destroyed during the war and the region needed a plan to guide reconstruction. Slums and temporary dwellings quickly overtook open

⁴ Shigeru Tenda, “Senri nyūtaun no kore made to kongo: machibiraki kara 50-nen wo hete [Senri New Town From Past, Present to Future ~Fifty Years Since its Opening~].” *GBRC: General Building Research Corporation* 38.3 (07, 2013): 19.

⁵ Sorensen, *The Making of Urban Japan*, 202.

green spaces as Osaka faced the rapid growth of uncontrolled urban sprawl. Because Osaka was an industrial city, less land was available for dwelling in Osaka (53%) than in Tokyo (72%) and residents faced increasingly crowded and polluted dwelling conditions, with an average of only 2.9-*jo* (4.44 square meters) per person by 1953. City authorities in Osaka at the time were quite concerned with the redevelopment of the inner city and the elevation of the harbor. At the same time, citizens struggled to find adequate housing—a problem made worse by land readjustment programs initiated by earlier postwar planning interventions—and some residents resorted to building illegal makeshift dwellings on any available land.⁶ To control the rapidly developing industrial city, Osaka prefecture needed a regional plan.

Many ideas emerged for the Osaka region in the late 1940s before Senri New Town was proposed, though very few ever came to fruition. Kanno Wataro and Kobayashi Ichizō, two influential thinkers in Kansai at the time, called for a drastic reduction of the city through high-density planning to allow for wider thoroughfares and more open green space in 1947 talks concerning Osaka's development. This ran counter to the official national policy at the time, which called for satellite cities as a way to control urban growth, rather than high-density planning.⁷ Ultimately, their modernist ideas had little impact on Osaka's postwar regional planning, even though such ideas were quite popular in the Kansai region of Japan at the time, and another plan became the basis for reconstruction.⁸ In 1945, the head of Osaka's planning department, Kōzu Toshihisa, issued an outline for a regional reconstruction plan that aligned more closely

⁶ Hasegawa, "The Rebuilding of Osaka," 76-78; Kuniko Fujita and Richard Child Hill, "Together and Equal: Place Stratification in Osaka," in *The Japanese City = Nihon no toshi*, ed. P.P. Karan and Kristin Stapleton (Lexington, Ky: University of Kentucky Press, 1997), 116.

⁷ Ibid., 68-70. According to Junichi Hasegawa, "Kanno was the president of a local commercial association and a Member of the House of Representatives, while Kobayashi, a former president of Hankyu Railway Company, was the first president of central government's War Damage Rehabilitation Board (*sensai fukkoin*).” Kobayashi had also developed the suburb of Takarazuka in the 1910s.

⁸ Ibid., 71. Kansai, located in the western part of Japan, encompasses Osaka, Kobe, and Kyoto. Culturally distinct from Kantō, the region where Tokyo is located, its architectural and urban planning traditions at times have diverged considerably from those put out by Tokyo University. Nishiyama Uzō of Kyoto University is one such example. Along with Kobayashi and Kanno, Nishiyama was a proponent of introducing radically modern architectural and planning principles in both dwelling and civic center design. However, due to the strength of Japan's central government located in Tokyo, such ideals were not always executed. Senri New Town's civic centers, proposed initially by Nishiyama but later planned by the Takayama Laboratory at Tokyo University, attests to this fact.

with national policies. His plan covered 133,000 hectares and located only two million people in the 18,700-hectare area of Osaka City, while the remaining three million would be distributed to the surrounding suburbs. He to called for wider roads, although within the existing grid layout, as well as 100 hectares of open green space in each administrative ward, which would contribute to the health and functionality of the city. Despite the support of the central government for Kōzu's plan, the reconstruction of Osaka was quite difficult to execute and fiscal cuts levied by the central government in 1949 dramatically reduced public spending; in 1950, Osaka was still short 60,000 dwellings and nowhere near achieving Kōzu's goals.⁹

Although visionary modernist plans were rarely executed in postwar Japan, as Carola Hein notes, the ideas of another Kansai architect, Nishiyama Uzō of Kyoto University, proved to have a wide impact on urban planning in Japan, particularly at Senri New Town, which he helped to design. Nishiyama's ideas were more closely aligned with the traditional patchwork form of urbanism composed of *machi* (neighborhoods), but were also shaped by modernist thought, as he had studied a large body of Western literature in his early career. He was particularly interested in planning theory that emphasized economic and social approaches to urban design. Hein writes that he was "one of the rare Japanese planners whose proposals [were] based on a comprehensive and long term concept of society," and was committed to quality of the living environment as much as to more technical aspects of planning.¹⁰ He was particularly drawn to garden city and neighborhood unit concepts, and built upon the work of Clarence Perry and Thomas Adams in addition to Japan's own garden suburb tradition in his proposals, though he actually returned to some of the more noble social and economic ideas of the original garden city proposed by Howard. As a forward thinker, he easily adopted and discarded many different Western theories at will to best repond to the Japanese context, into which he integrated ideas such as the "linear city" proposed by

⁹ Hasegawa, "The Rebuilding of Osaka," 71-78; Fujita and Hill, "Together and Equal," 116.

¹⁰ Carola Hein, "Visionary Plans and Planners: Japanese Traditions and Western Influences," in *Japanese Capitals in Historical Perspective: Place, Power and Memory in Kyoto, Edo and Tokyo*, ed. Nicolas Fiévé, and Paul Waley (London: New York: RoutledgeCurzon, 2003), 334.

N.A. Miliutin of the Soviet Union and the “new city” outlined by Gottfried Feder of Germany.¹¹ Nishiyama’s 1947 proposal for Osaka, which he submitted to a “competition organized by the Kansai-based Japan Architects’ Association,” featured a series of civic centers for the city that draw upon his from his earlier proposals for “life spheres” organized rationally in the city by function.¹² Concerned with reorganizing the city as well as managing its growth to make it more livable, “life spheres,” or self-governing neighborhood units would both control sprawl (he proposed a spindle-like scheme of life-spheres in 1946), and provide for the welfare the nation’s citizens.¹³ According to Katayose Toshihide, a Kyoto University graduate who wrote *Jikken toshi: senri nyūtaun wa ikani tsukurareta ka* [Experimental City: How Senri New Town was Built] in 1981, Nishiyama’s theories laid the groundwork for the development of Senri New Town, as he was heavily involved with the early stages of its planning.¹⁴

In 1955, Osaka Prefecture saw a need for a potent intervention in the housing market beyond the construction of housing estates within the city and began planning Senri New Town, the first and largest initiative made by the local government to address the housing crisis.¹⁵ The *Ōsakafu kigyōkyōku* (Osaka Prefectural Public Enterprise Bureau, hereafter OEB) managed the project in collaboration with the Japan Housing Corporation (JHC), local public housing agencies, and private enterprises, financing the project through a combination of land sales, bonds and loans, investments from utility, transportation, and private real estate companies, and a small fraction of federal grants.¹⁶ Situated in Toyonaka and Suita Cities, the prefecture distinguished Senri New Town through design, topography, and social characteristics rather

¹¹ Ibid., 337.

¹² Hasegawa, “The Rebuilding of Osaka,” 71.

¹³ Hein, “Visionary Plans and Planners,” 338-341.

¹⁴ Toshihide Katayose, *Jikken toshi: senri nyūtaun wa ikani tsukurareta ka* [Experimental City: How Senri New Town was Built] (Tokyo: Shakai Shisōsha, 1981), 111-120.

¹⁵ Tenda, “Senri nyūtaun no kore made to kongo,” 19.

¹⁶ Paul M. Golderg, “Housing Development in Japan,” (Working Paper, Alfred P. Sloan School of Management, M.I.T., 1971): 57-58. According to Paul M. Goldberg, the public cost of the building was 60 billion yen (11.8 for land purchase, 29.5 for public overhead development). 38 billion was funded through the sale of land, while .5 billion was funded through national grants. “The balance of the development costs was funded by bonds that were floated specifically for the Senri development and by a loan from the Osaka Prefectural Government.” Private companies spent an additional 128 billion yen (35 for dwelling construction, the remainder for railroads, transportation terminals, and utility line extension).

than administrative boundaries, although it would later be designated as a secondary regional city in Osaka Prefecture's 1966 Regional Plan.¹⁷ As a prototype, it was intended to play a strong role in the Osaka region, modulating between the city and mountains to the north. Senri New Town was far more conceptually ambitious than its suburban neighbors or even the new urban housing estates constructed by the JHC, and hoped to foster a "hometown consciousness" in a carefully tailored social, psychological, and physical environment that would engender a sense of community and identity on multiple scales.¹⁸ It would offer its 150,000 residents an idyllic living environment. In addition to the 40,120 dwellings constructed under the guidance of the OEB, Senri New Town also included district and neighborhood centers and luxurious open spaces to enhance the experience of the residential new town. These objectives were clearly indebted to the European new town movement, where nation-states were working to cultivate idealized living environments for the working and middle classes using modern multi-family apartment buildings, neighborhood units, and civic centers. Planners in both Europe and Japan envisioned a lifestyle characterized by family values, leisure, and good health within an urban setting that offered both access to essential services and institutions, as well as ample open space.¹⁹ Senri New Town would become a prototypical new town rooted within the international new town movement.

The OEB chose an exquisite site located conveniently away from the industrial city for the Senri New Town project. When Osaka Prefecture purchased the land for Senri New Town in 1958, the 1,160-hectare virgin site was covered with magnificent trees and bamboo forests, and peppered with small rice paddies and ponds. The site for the new town ran five kilometers north to south and three kilometers east to west across the varied topography of a small diluvial plateau known as Senri Hills at the foot of the Rokko Mountain, which lay to its north. The Osaka Plains sat directly to its south, while hill formations

¹⁷ Katsumasa Satō, *Senri nyūtaun—hanseiki no kiseki to sono konjitsu—* [Senri New Town—Traces of a Half-century and Today—], Ichiura Housing & Planning Associates, (2010): 13, Accessed March, 2015, http://www.ichiura.co.jp/newtown/pdf/senri_nt/all.pdf.

¹⁸ Ōsakafu, *Senri nyūtaun no kensetsu*, 5. Public housing estates generally covered no more than a few hundred acres each and consisted exclusively of housing units with little consideration paid to the landscape or civic infrastructure.

¹⁹ Tenda, "Senri nyūtaun no kore made to kongo," 18; Ōsakafu, *Senri nyūtaun no kensetsu*, 5.

oscillating between 20 and 130 meters above sea level gave the planners beautiful natural conditions with which to work.²⁰ The choice of this picturesque landscape was as social as it was esthetic. The new town project, designed to showcase rather than suppress the terrain, crafted its identity around the celebration of open space and environmental beauty that could not be found in the city or even neighboring suburbs. Inciting nostalgia for the pastoral ideal embodied in projects like *Denenchōfu*, Japan's first garden suburb, Senri New Town would be a utopian refuge from the dense and dirty industrial city.

Ironically, there was considerable tension between the natural environment and how city planners actually carried out the construction of the site. Despite its beauty, Senri's hilly terrain required extensive surveys and posed huge challenges to the quick, large-scale construction required of a new town. While some special trees were preserved and the master plan was designed to integrate itself with the topography, in reality most hills were flattened for housing development and large swaths of forest were cleared. Meanwhile, roads were designed to wind through the natural valleys at the site. Photographs from the time of Senri's construction, such as those found in the front matter of *Senri nyūtaun no kensetsu* [The Construction of Senri New Town] published by Osaka Prefecture in 1970, clearly show the impact this project had on the landscape, which was completely decimated. Numerous hilltops were shaved off and valleys filled with dirt to make way for the project, while others were left to give it shape.²¹ An aerial view of Senri published in an article titled "A Complete Look at Senri New Town [Osaka Pref., Japan]," for *Japan Architect* in 1965, also illustrates the sharp contrast between the luscious landscape and muddy construction site for Senri New Town, which was only half completed at the time.²² To replicate the original verdant qualities of the site, between 1962 and 1968 the OEB planted 130,000 new tall trees and 720,000 shrubs to replace the original forests that had been lost. They included a variety of species, such

²⁰ Ōsakafu, *Senri nyūtaun no kensetsu*, 5, 14; Tenda, "Senri nyūtaun no kore made to kongo," 18; "A Complete Look at Senri New Town [Osaka Pref., Japan]," *Japan Architect* 40, (05, 1965): 69.

²¹ Ōsakafu, *Senri nyūtaun no kensetsu*, vii xi, 70. While Osaka Prefecture seems to lament the surgery on the landscape, it also proudly proclaims its sensitivity in preserving trees, hills, and valleys while the project was built. However, the images that populate this portion of the publication do not seem to support this assertion.

²² "A Complete Look at Senri New Town [Osaka Pref., Japan]," *Japan Architect* 40, (05, 1965): 72.

as Japanese black pine, Australian acacia, deodar cedar, keyaki, and Japanese bayberry to name a few.²³ Fifty years later, the new trees planted at the time of construction have reached full growth, recreating the original verdant qualities of the site, while the hilly terrain can still be perceived despite the invasive surgery it received in the 1960s. Today, Senri New Town is touted for its landscape, which it considers to be one of its distinguishing features and core expressions of identity. However, like many other so-called natural landscapes, the site was completely remanufactured, catering to an illusion of the pastoral ideal rather than preserving the natural ecology of the site itself.

Osaka Prefecture situated Senri New Town in Senri Hills not only because of the site's natural beauty, but also because of its proximity to the center of Osaka and to the Osaka International Airport, located just to its east. Similar to other postwar new towns that privileged the natural landscape, like Vällingby and Tapiola, the site was located only ten to fifteen kilometers north of central Osaka, which allowed residents to both commute to Osaka for work or school and retreat to a more healthful and bucolic environment at home. Senri New Town was also intended to function as a secondary commercial center for the region, although it has never been a municipality of its own, instead straddling Suita and Toyonaka cities. Suita City governs the eastern and southern third of the western half of the new town, covering a total of 791 hectares, while Toyonaka City covers the northwestern portion of the city as well as the rest of Senri's western flank, governing the remaining 369 hectares. Near the center of the new town, Kamishinden, the original village in Senri Hills, governs itself, deliberately excluded from the master plan due to difficulties in land acquisition.²⁴ This was similar to the condition of Vällingby, which actually encompassed both Vällingby and Råcksta around its civic center and Blackeberg, Grimsta, Hässelby Strand, and Hässelby Gard in the entire development area.²⁵ What distinguished Senri New Town and Vällingby was that in

²³ Ōsakafu, *Senri nyūtaun no kensetsu*, 171-172. Over 30 types of trees and 40 types of shrubs were planted by the OEB in Senri New Town's parks.

²⁴ "Senri nyūtaun no rekishi" [A History of Senri New Town], *Senri nyūtaun jōhōkan: riyō no goannai* [Senri New Town Information Center: Usage Guide], (Suitashi, April, 2012); Ōsakafu, *Senri nyūtaun no kensetsu*, 19.

²⁵ David Pass, *Vällingby and Farsta--From Idea to Reality; The New Community Development Process in Stockholm*, (Cambridge, Mass: MIT Press, 1973), 10.

Vällingby's case all of the locales fall within the boundaries of development area, whereas in Senri New Town, Suita City and Toyonaka City did not. Senri New Town, therefore, was not actually a "town" in an administrative sense, as it lacked any political independence. Instead, it was a social phenomenon distinguished from its neighbors by its unique environmental and architectural qualities.

The OEB planned Senri New Town as a bedroom community, rather than an economically independent satellite town, necessitating strong connections to the surrounding suburbs and to Osaka City.²⁶ Commuters relied on several pieces of infrastructure that plugged the new town directly into Osaka City. In 1963, one year after the first residents moved into the neighborhood unit of Satakedai, the first connection to the city was made with the construction of the Hankyū Senri Line between Senriyama station and Shin-senriyama station (now Minami-Senri). To form the north-south axis in the eastern part of the new town, it was extended to the newly opened Kita-Senri station four years later in 1967. As the construction of Senri New Town neared completion in 1970 with the advent of the Japan World Expo to its north, the Kita-Osaka Kyūkō line opened in Senri-Chuo, forming the city's western axis.²⁷ At the

²⁶ Hiroshi Tanabe, "Problems of the New Towns in Japan," *GeoJournal: An International Journal on Human Geography and Environmental Sciences* 2, no.1, (1978): 39-46, accessed January 27, 2015. <http://www.jstor.org/stable/41142068>. New towns in Japan did not have a central business district of any kind, Tanabe points out. In its place were pedestrianized civic centers designed to foster community life, but not the economic viability of the new town. Because of this, new towns in Japan are often referred to as "bedtowns," "bedroom communities," or "commuter suburbs." Tanabe, however, compares Japanese new towns to British ones, which were often independent and low-rise. A more apt comparison is between Japanese and Scandinavian new towns. Both use a mixture of high and low density housing organized around a pedestrian civic center. Furthermore, new towns in both Scandinavia and Japan fully intended their reliance on the central city and only made minimal provisions for employment, instead prioritizing the experience of the residential environment.

²⁷ Andrea Yuri Flores Urushima, "Genesis and Culmination of Uzō Nishiyama's Proposal of a 'Model Core of a Future City' for the Expo 70 Site (1960-73)," *Planning Perspectives* 22 (10, 2007): 391-416; Toyokawa Saikaku, "The Core System and Social Scale: Design Methodology at the Tange Library," *Kenzo Tange: Architecture for the World*, edited by Seng Kuan and Yukio Lippit (Baden : London: Lars Müller ; Springer, 2012), 25-26. The Osaka World Exhibition of 1970, or EXPO '70 held just to the north of Senri New Town was important for two reasons. First, its construction was anticipated by the Senri New Town Project. Second, the competition for the EXPO'70 was important because Nishiyama submitted an important proposal for the "Model Core of the Future City," which would have been an archetypal project had it been built. The "Model Core" would be an infrastructural element that could be used in future satellite cities around Osaka, an idea he expanded in a regional proposal in 1971. This is notable because, as Urushima points out, the idea of an urban core was foreign to Japanese urban planning history. Nishiyama proposed a central zone, termed the "Symbol Zone" that would create "a central space in the site to centralize infrastructure and the traffic of people" using a large plaza. It would also organize the surrounding traffic system. His proposal was a part of the evolution of his "Home City" theories, which concentrated public activity and resources at the core of the city, while segregating the vehicle through a rational traffic system. The EXPO '70, along with the 1964 Tokyo Olympics, symbolized Japan's postwar transformation. The project was carried out by rivals Nishiyama and Tange (Takayama's student at Tokyo University), although it was Tange's vision, not Nishiyama's that was actualized. (Urushima notes that it was Tange, not Nishiyama, who was the official state-sanctioned architect of postwar Japan.) Tange's team, who was also concerned with the

same time, Senri's major boulevards opened. Shin-Midōsuji Boulevard runs north-south underneath the Kita-Osaka Kyūkō line while the Osaka Chūō Kanjōsen Belt Line, Senri's central east-west axis, solidifies Senri New Town's connections to Osaka. Finally, in 1990 the Osaka Monorail was opened above the belt line, connecting Senri-Chūō with Minami-Ibaraki station.²⁸ Smaller boulevards and avenues (such as Senri Sakura Dōri, Senri Keyaki Dōri, Senri Ginnan Dōri and Municipal New Senri Route #3) fleshed out this framework, responding to the natural topography of the site and linked into neighboring municipalities.²⁹ This regional infrastructure was a critical component of Senri's design, as industry had been more or less disregarded in the plan, resulting in a heavy dependence on the central city for jobs. In fact, the New Residential Town Development Act, passed in July of 1963 to foster the development of residential new towns, precluded any serious provision of "business or industrial activities not directly related to service for its residents," reinforcing the role of the postwar new town as a commuter city.³⁰ This reflected sentiments on the part of the state to centralize the city as a means of bolstering economic productivity, while pushing public housing provision to the urban fringe. In its 1970 publication, *Senri nyūtaun no kensetsu* [The Construction of Senri New Town], musing to its audience as to why such a community, twenty minutes from central Osaka, had not yet been built, the Osaka Prefectural Government estimated that almost 42,000 people (nearly 28% of the population) commuted out of Senri New Town for work or school each day.³¹ Later pamphlets produced by the government, such as *Senrinyūtaun: hito to seikatsu* [Senri New Town: People and Lifestyle], published in 1973, describe commuting to the central city as a matter of course in the daily lives of two fictional

management of large crowds, constructed a large "Festival Plaza" with the help of Okamoto Tarō that was "more rationally and tightly designed" than Nishiyama's.

²⁸ *Senri nyūtaun jōhōkan: riyō no goannai*.

²⁹ Senri nyūtaun machibiraki 50-nen jigyō jikkō īnkai, *Senri Newtown Map: Senri nyūtaun mappu*, (Senri nyūtaun saisei renraku kyōgikai, March, 2013).

³⁰ Hiroyoshi, Kano, "Tama New Town: The Growth of a New Residential Area in a Suburb of Tokyo," in *Growing Metropolitan Suburbia: A Comparative Sociological Study on Tokyo and Jakarta*, ed. Hiroyoshi Kano, (Jakarta: Yayasan Obor Indonesia, 2004), 140.

³¹ Ōsakafu, *Senri nyūtaun no kensetsu*, lix, 103. This calculation translates to 1.21 members commuting from each household.

families living in the new town.³² Neither of these instances hint in any way at the inconvenience of these commutes that would later become a loud criticism of Japan's new towns. At its inception, this regional infrastructure, as well as the separation of the *sarariman*'s workplace from his home life, was considered a perk of the modern lifestyle.

The Development and Organization of Senri New Town's Master Plan

Senri New Town was a quintessential postwar residential new town and as Japan's first new town introduced the key principles of new town planning to Japan. Organized around twelve clearly defined neighborhood units, the master plan was rational and hierarchical, ensuring an even distribution of amenities and spatial experiences across the project. Completed in 1970 after only eight years of construction, Senri New Town was an architecturally and conceptually unified environment that drew upon the modernist theories of Nishiyama Uzō and the rationalist ones of Takayama Eika. It also bears strong references to elements of its contemporaries in Europe, such as the pedestrianized civic center, situating it firmly within the canon of global postwar new towns. Senri New Town's master plan was the result of a collaboration across many bodies under the guidance of the OEB. The Nishiyama Uzō Laboratory at Kyoto University prepared the initial 4,000-hectare proposal in 1955, which was followed by a series of proposals prepared at the behest of the OEB beginning in 1957.³³ Research conducted by Nishiyama's Laboratory, an academic research association called the Architectural Institute of Japan (AIJ), and the Osaka Prefectural Government's home office formed the foundation of Senri New Town's early proposals.³⁴ Drawing upon the work of Clarence Perry, Thomas Adams, and the German planner,

³² COM keikaku kenkyū shitsu, "Katei seikatsu [Family Lifestyle]," *Senri nyūtaun: hito to seikatsu* [Senri New Town: People and Lifestyle], (Tōyonakashi: Zaidan hōjin ōsakafu senri sentā, 1973), 20-30, Senri New Town Information Center.

³³ Tetsukazu Akiyama, "Modanizumu jappan 1950's → 1970's -8- Senri nyūtaun: Hajimete no jikken toshi" [Modernism Japan 1950's → 1970's -8- Senri New Town: First Experimental City], *Kenchiku Bunka* no.563 (09, 1993): 152. Over the course of the proposals, concern about land acquisition reduced the overall area first to 2,500 hectares, and finally to 1,300 hectares.

³⁴ Katayose, *Jikken toshi*, 133-141. The AIJ conducted research on the scale of the neighborhood unit, looking its terrain and how to best subdivide it. They studied the relationship between population density (100 people per hectare) and the surrounding roads, rivers, and landscape. Meanwhile the Japan Urban Planning society examined a more macro scale, particularly the arrangement of neighborhood units from the viewpoint of the "residential lifestyle." They also worked on dwelling placement, site planning, and the location of institutions.

Gottfried Feder, Nishiyama's urban theories centered on the neighborhood unit (which he termed "life sphere") and decentralist regional development, and were quite popular in Kansai at the time (Nishiyama was not popular in Tokyo spheres).³⁵ Katayose emphasizes that Nishiyama took a sociological approach to the design and was concerned with fostering community within the project, instead of centering his principles for the project on institutions or on construction, he centered them on "lifestyle" (*seikatu chūshin shūgi*). This led him to propose a hierarchy of urban units—*shi* (city), *jūku shūdan* (neighborhood districts), *kinrin jūku* (neighborhood units), *kinrin bunku* (neighborhood sub-districts), and *rinpoku* (neighborhood blocks)—designed to help build strong relationships between different social classes through adjacency on the block level and encounter at the scale of the district and the city.³⁶ Tokyo University's Takayama Eika Laboratory built upon Nishiyama's 1955 proposal and the research conducted by the AIJ, the City Planning Institute of Japan (CPIJ), and the OEB to prepare a series of drafts for the master plan that refined the neighborhood unit concept originally proposed.³⁷ According to a 1965 article in *Japan Architect* entitled "A Complete Look at Senri New Town," the drafts were grounded in three major concepts: the central of the "ideal residential environment," the extension of the Hankyū Senri Line into Senri and the control major east-west trunk lines, and the organization of the new town into three districts, each with its own district center and cultural characteristics.³⁸ The intention was to design a rationally organized ideal residential environment of high-density and single-family dwellings that would be well-integrated with Osaka from a transportation perspective.

³⁵ Hein, "Visionary Plans and Planners," 337. See also Carola Hein, "Machi: Neighborhood and Small Town—The Foundation for Urban Transformation in Japan," *Journal of Urban History* 35, no.1 (11, 2008): 75-107, for how modern Japanese planners imported and applied foreign urban planning techniques in relation to the more traditional urban units, called *machi*, of Japanese cities. She asserts that the neighborhood unit proved particularly useful in Japan's new process of *toshi keikaku* (city planning) in the twentieth century, as the neighborhood unit paralleled the more traditional urban unit of *machi*.

³⁶ Katayose, *Jikken toshi*, 114-115. He considered three social classes: white-collar workers, blue-collar workers, and the bourgeoisie.

³⁷ Akiyama, "Modanizumu jappan 1950's → 1970's," 152; Ōsakafu, *Senri nyūtaun no kensetsu*, 18; Hein, "Machi: Neighborhood and Small Town," 93. Takayama Eika, who founded the first urban planning department in Japan in 1962, also had interest in the neighborhood unit, which was evident in plans for Datong (Daidō) that he produced with Uchida Yoshizō in 1939. Hein shows that they were quite similar to neighborhood units plans for Detroit.

³⁸ "A Complete Look at Senri New Town," 70.

After the Nishiyama Laboratory prepared the initial proposals for Senri New Town, the Takayama Laboratory developed the series of drafts that culminated in the master plan. Prepared in August of 1959, the first draft redefined the site from 4,000 to 1,300 hectares—the result of the government’s decision to avoid master planning over existing villages like Yamada and Kamishinden—and established the formal structure of the new town.³⁹ Concentric in form, the first draft organized nineteen neighborhood units around three district centers, Kamishinden Village, and two large parks. A generous greenbelt surrounded the neighborhood units, which were structured within two incomplete ring roads. In the second draft, the Takayama Laboratory reduced the area of the greenbelt and added a new park to the north, shifting the now 1,160-hectare site into the Kumanoda Plains. They also reconfigured the road system into a flexible grid that responded to the topography of the site, establishing the central east-west trunkline. Further refinements aligning the road system to the natural topography of the site were made in the third draft, which added green boulevards connecting the parks. The fourth draft, composed of fourteen neighborhood units, elaborated on the green boulevards and refined the park placement. It became the basis for the final master plan issued by the OEB in 1960. Yamada Village was also briefly included in the third and fourth drafts, but dropped again in the master plan due to the complicated nature of land acquisition.⁴⁰ The master plan covered a total of 1,160 hectares and called for 30,000 dwelling units at a density of 120 people per hectare.⁴¹ Although the plan had evolved over the course of four years, it retained the key elements of the neighborhood unit, a green belt, and three civic centers.

The final master plan for Senri New Town was defined by many of the same conceptual elements of the European new towns like Vällingby. Twelve *jūku* (neighborhood units) of roughly 100-hectares each formed the basic unit of the new town, a legacy of Nishiyama’s original proposal and clear reference to

³⁹ Akiyama, “Modanizumu jappan 1950’s → 1970’s,” 153. Osaka Prefecture determined that land acquisition of the existing villages would be too much trouble and instead chose to develop only the surrounding farmland and forested areas.

⁴⁰ Akiyama, “Modanizumu jappan 1950’s → 1970’s,” 153; “A Complete Look at Senri New Town,” 71.

⁴¹ Ōsakafu, *Senri nyūtaun no kensetsu*, 19.

European new towns and American garden suburbs.⁴² They were organized around three pedestrianized *chiku sentā* (district centers) of 30,000 to 50,000 people each, alluding to the civic centers promoted by CIAM at its 1951 “Heart of the City” congress. All three district centers in the master plan connected to Osaka City through rail lines. *Jūku* were further subdivided into *bunku* (sub-districts) made up of small *kinrin sentā* (neighborhood centers), neighborhood parks, and *kinrin gurūpu* (neighborhood groups, or superblocs of housing units organized around play-lots).⁴³ This hierarchy of scale was intended to provide residents with a full palette of urban amenities that would meet their daily needs within the new town and periodic needs within the region, although Senri New Town was never intended to function as an independent satellite city and commuting to Osaka was expected. The neighborhood unit idea may have also been appealing because it corresponded to the idea of *machi*, a rather complex term commonly defined as “small town” or “neighborhood” that takes on greater psycho-social meaning, as Carola Hein notes, writing: “it appears that the notion of adjoining centers that catered to all daily needs while being linked into a larger network of central places appealed to the Japanese perception of *machi*-like urban units and the flows between them.”⁴⁴ Although there are smaller urban units at Senri, the neighborhood unit most directly addressed these needs.

Senri New Town’s road system was similarly hierarchical and drew parallels to Le Corbusier’s 7V hierarchy of traffic circulation.⁴⁵ It was likely that Takayama was familiar with his ideas through the Rationalist School at Tokyo University. Nishiyama too had “considered the car and not the train the main

⁴² “Map,” *Senri nyūtaun machibiraki 50-nen: kōshiki ibento kiroku* [Opening 50 Years of Senri New Town: Formal Event Record], Suita-shi Toyonaka-shi Senri nyūtaun renraku kaigi, 2012-2013, <http://senri50.com/e53108.html>, accessed June, 2015. Neighborhood units range from 53 to 139 hectares.

⁴³ Ōsakafu, *Senri nyūtaun no kensetsu*, 21; “The Senri New Town Central District Center,” *Japan Architect* 45, (10, 1970): 61.

⁴⁴ Hein, “Machi: Neighborhood and Small Town,” 97.

⁴⁵ J. Tyrwhitt, J. L. Sert, and E. N. Rogers editors, *The Heart of the City: Towards the Humanisation of Urban Life Congrès Internationaux d’Architecture Moderne: CIAM 8* (London: Lund Humphries, 1952), 36-40; Sarbjit Bahga and Surinder Bahga, *Le Corbusier and Pierre Jeanneret: Footprints on the Sands of Indian Architecture*, (New Delhi: Galgotia Publishing Company, 2000), 48. Both Maekawa and Tange had participated in CIAM 8 in 1951, where they would have encountered Le Corbusier and other influential thinkers of the day, like Sert. Corbusier categorized traffic circulation into seven types: regional highways (V1), main boulevards (V2), sector roads (V3), shopping streets (V4), neighborhood streets (V5), residential lanes (V6), and pedestrian pathways (V7).

means of transport” in his own urban visions, laying the groundwork for its careful consideration even in the initial proposal.⁴⁶ Katayose further notes that Nishiyama took care to examine the experience of the commuter in his proposals.⁴⁷ In the final master plan, the road system followed the natural topography of the hilly terrain, such that roads were often (though not always) situated primarily within valley conditions. In sum, the transportation system covers 250 hectares, consuming 22% of the total land area. Corresponding to the spatial scales of the new town, the roads fell into a hierarchy of six types: *chihō kansen gairo* (regional trunk roads), *jūku kansen gairo* (district trunk roads), *jūku kansen gairo* (neighborhood unit trunk roads), *kukaku gairo* (neighborhood block roads), *sai-gairo* (back roads), and *senyō hodō* (pedestrian pathways).⁴⁸ Interestingly, this attention to the automobile in Senri New Town’s plan predates its widespread diffusion through Japanese society. While automobiles had become the predominant form of transportation in the United States quite early in the twentieth century, they were slow to reach Japan, becoming the dominant form of transportation only in the 1970s.⁴⁹

The road system at Senri New Town not only serviced the various urban components, it also structured them. *Chihō kansen gairo* (regional trunk roads) and *Chiku kansen gairo* (district trunk roads) delineated the *jūku* while handling regional traffic. Regional trunk roads spanned fifty meters in width and handled high-speed traffic while district trunk roads connected Senri to the regional trunk roads and the surrounding municipalities, such as neighboring Minō. Regional trunk roads were massive pieces of infrastructure that were generally multilayered and sectionally differentiated from the city through the use of embankments. The Osaka Chūō Kanjōsen Belt-line, which runs parallel to the Chūgoku Expressway

⁴⁶ Hein, “Machi: Neighborhood and Small Town,” 87.

⁴⁷ Katayose, *Jikken toshi*, 111-112.

⁴⁸ Ōsakafu, *Senri nyūtaun no kensetsu*, xxiv, 24, 70, Zu 4-22, Senri nyūtaun chikei genjō zu [Figure 4-22, Current Topographical Map of Senri New Town].

⁴⁹ Ministry of Internal Affairs and Communications: Statistic Bureau, “12-10 Motor Vehicles Owned by Kind (F.Y.1936--2004)” and “12-2-a Domestic Passenger Transportation by Mode of Transportation (F.Y.1950--2004),” *Chapter 21 Housing*, Statistics Bureau (1996), accessed March, 2015, <http://www.stat.go.jp/data/chouki/zuhyou/21-10.xls>. Data from the Statistics Bureau of Japan shows that private automobile use and ownership remained relatively marginal until the 1970’s. Between 1970 and 1975, passenger car ownership in Japan more than doubled (from 6.8 million to 14.8 million), while passenger car ownership in 1958 was only 269,000 vehicles. In 1975 the number of passengers carried by private vehicles surpasses the number carried by railways, while in 1979 the passenger mileage of private vehicles surpasses that of railways.

and Osaka Monorail, was an example of this. Pedestrian ways and elevated crossways, such as those along the Shin-Midosuji Boulevard that parallels the Osaka Hankyū Rail Line, buffered residents from dangerous and noisy traffic. District trunk roads, like Senri Sakura Dōri, also provided space for pedestrians. These luxurious Western-style boulevards lined with trees and pedestrian pathways were slower in speed and more pleasant than the regional trunk roads. Only four lanes wide with a median, rows of trees formed a natural barrier between the pedestrians and vehicles, while much smaller planted embankments partitioned the neighborhood districts from the traffic. The ground level pathways feel safe and well-shaded while the avenues treat the drivers to a show of Japan's beautiful vegetative palette.⁵⁰ As the largest and most monumental roads, the regional and district trunk roads acted as the connective tissue between Senri New Town and the surrounding region.

The pedestrian was also given careful consideration in the design of Senri New Town, particularly on smaller scales of the new town. *Jūku kansen gairo* (neighborhood unit trunk roads) penetrated the neighborhood units to form sub-districts and connect residents to the neighborhood shopping centers and schools. Much slower and only two lanes wide, these roads mainly served local traffic and bus services, but were still frequently lined with pedestrian pathways and plantings, although embankments were less common. Pedestrian pathways were built more often near multi-family housing blocks and neighborhood shopping centers than near blocks of single-family homes. Meanwhile block roads, *kukaku gairo* (neighborhood block roads) connected to the district and residential trunk roads, defining residential and commercial blocks, and *sai-gairo* (back roads) connected housing directly to the block roads and trunk roads, often using a cul-de-sac formation derived from American garden suburbs like Radburn. These roads were generally not used for any through traffic and were quite slow.⁵¹ While stairs and pedestrian shortcuts branching off of the block roads and back roads in Senri New Town, few pedestrian pathways

⁵⁰ Senri nyūtaun machibiraki 50-nen jigyō jikkō īnkai, *Senri Newtown Map*.

⁵¹ Ōsakafu, *Senri nyūtaun no kensetsu*, 24.

were provided on this scale.⁵² Senri New Town's treatment of the pedestrian and the vehicle was highly rational and well intentioned as such consideration was not common in Japanese cities at the time. The careful planning of vehicular ways was also far-sighted, anticipating the dominance of the automobile by the 1970s.

Senri New Town's three *chiku sentā* (district centers), Senri Chūō Chiku (Senri Central District), Minami-Senri Chiku (South Senri District) and Kita-Senri Chiku (North Senri District), were also designed around the vehicle and the pedestrian and appear to be heavily indebted to the civic center theories proposed by postwar CIAM.⁵³ The OEB saw the district center as a central organizing element of the new town from its inception, which was illustrated in a conceptual diagram for the new town published in *Senri nyūtaun no kensetsu*. The diagram pivoted high-rise, mid-rise, and low-rise neighborhood units concentrically around a 1.5 kilometer core that included elementary schools, small shopping centers, and a rail station. An outer ring contained by a ring road and divided by five spokes structured space for a high school and middle school, several more shopping centers, and institutions. This diagram, which clearly parallels the work of Ebenezer Howard, emphasized the social and spatial centrality of the core (district center). The district center would not only serve as the key point of contact with the central city, it would also be the most urban space in the new town, providing workplaces, commercial space, cultural amenities, public welfare, and other essential services.⁵⁴ The district centers were also carefully designed to cultivate a welcoming human environment that would foster community cohesion. Fumihiko Maki, who designed the *Senri chūō chiku sentā biru* (Senri Central District Center Building) in 1967, was aware of postwar CIAM theories that seemed to influence the district center at Senri New Town and had been enrolled in Sert's first design studio at Harvard GSD in the mid-1950s.⁵⁵

⁵² Senri nyūtaun machibiraki 50-nen jigyo jikkō inkai, *Senri Newtown Map*.

⁵³ Tenda, "Senri nyūtaun no kore made to kongo: machibiraki kara 50-nen wo hete," 19; Eric Paul Mumford, *Defining Urban Design: CIAM Architects and the Formation of a Discipline, 1937-69*, (New Haven: Yale University Press, 2009), 80.

⁵⁴ Ōsakafu, *Senri nyūtaun no kensetsu*, 45.

⁵⁵ Maki sōgō keikaku jimoshō, "Senrichūō chiku sentā biru [Senri Center Region Central Building]," *Shinkenchiku* 45 no.7 (07,

Takayama, meanwhile, was likely familiar with these ideas through his peers at Tokyo University. Input from Maki & Associates and the Takayama Laboratory likely facilitated the infusion of CIAM derived principles in the design of the district centers, which paid careful attention to the experience of the pedestrian.

The civic center was first put to the test in Minami-Senri (South Senri) Center, which opened in 1965, two years after the Hankyū rail line was extended into the new town from Senriyama. Each district center would be the “heart” of the district. Located in the southeast quadrant of the new town near the Senri-Minami Kōen (Senri South Park) at the intersection of Senri Sakura Avenue and Senri Ginnan Avenue, the 5.2-hectare district center was designed to provide shopping and entertainment in addition to meeting its resident’s daily needs in the surrounding neighborhood units.⁵⁶ Plans published before the district center was completed in a 1964 edition of *Japan Architect* showed two centrally located supermarkets located to the east of the plaza and a small railway station to its west. An office tower just to the north of the railway station could be reached using an overpass while two more office buildings, paralleling a bus stop and hospital lay to the north of the central supermarket. To its south sat the most notable building in the district center, the South Area Center Building by Murano & Mori.⁵⁷ Unfortunately, this beautiful modern building, which housed an assembly hall, restaurants, banks, and a post office, was recently torn down to make way for a public plaza and reserve zone.⁵⁸ The original supermarkets and the office building to its north were also torn down, replaced in 2004 by the Garden Mall Minami-Senri Commercial Complex, a parking lot and a new high-rise apartment complex. The original programs of the Minami-Senri Center were meant to create an urban focal point for the region, where residents could

1970): 179; Mumford, *Defining Urban Design*, 109.

⁵⁶ *Senri nyūtaun jōhōkan: riyō no goannai*; Ōsakafu, *Senri nyūtaun no kensetsu*, 91-98.

⁵⁷ “The Senri New Town Neighborhood Center,” *Japan Architect* 39, (12, 1964): 36.

⁵⁸ Suitashi rōdō kumiai rengōkai, “Suita seikatsu: kōreika ga susumu senri nyūtaun [Suita Lifestyle: The Continuation of an Aging Society in Senri New Town],” *Suita shimin shinbun* 15, 2009, accessed, January 2015, <http://www.suitasirouren.com/shimin/machi/09vol15-04.html>.

conveniently meet their daily needs. Although it was secondary to Senri Chūō Center, it played a strong role as the social and special “heart” of the south district.

Kita-Senri (North Senri) Center was the second “heart” to be built in Senri New Town. The smallest and most suburban, it was supposed to possess a “*Yamanote-teki*” quality, referring to the famous high-ground region of Tokyo. The Hankyū rail line was extended to Kita-Senri station in 1967, when shops in Kita-Senri (North Senri) Center opened for the first time. Kita-Senri Center sat at the intersection of Senri Keyaki Avenue and Senri Route #3 in the north district. Serving Gojishirodai, Aoyamadai, and Furuedai, it was bound by the Hankyū rail line to its east and housing blocks to the north, south and west. Only 3.4 hectares, the Kita-Senri Center was characterized by low-rise buildings a “relaxed” and “bright” atmosphere.⁵⁹ The Senri Kita Center Building, which housed municipal functions, formed a U shape around a landscaped bus circle along with shopping centers, a police box, and a post office. A medical center and a parking lot capped the ends of the U shape while another parking lot, a small library, and a school lined the southern edge of the commercial block. Dios, a shopping mall opened in 1994, contributed a postmodern quality to the district center with its central courtyard and curving rows of small, local shops that referenced the *shotengai* (shopping arcades) found throughout Japan.⁶⁰ Kita-Senri center is symbolic in many ways of the condition of the postwar new town. While clearly a civic center designed to engender a sense of community and meet the needs of the new town’s residents, it falls quite short of being an economically independent commercial center that provides jobs to residents in sufficient measure.

Senri Chūō (Senri Central) Center best exemplifies the civic center ideas of postwar CIAM, although it too never took on the economic independence of the European new town.⁶¹ Senri Chūō Center opened in 1970, the same year the Japan World Expo was held just to the east of Senri New Town. The largest of

⁵⁹ Ōsakafu, *Senri nyūtaun no kensetsu*, xxvii, 98-101.

⁶⁰ *Senri nyūtaun jōhōkan: riyō no goannai*.

⁶¹ Ōsakafu, *Senri nyūtaun no kensetsu*, 91.

the district centers in Senri New Town at 28.7 hectares, it had the most comprehensive program, containing “office buildings, hotels, department stores, leisure quarters, parking buildings and railways and highways” and was designed to be the “heart” of Senri New Town.⁶² In 1966, the Takayama Laboratory at Tokyo University began working on a master plan for Senri Chūō Center with the Maki General Planning Office, Nikken Sekkei Komu, and Murano and Mori.⁶³ The Senri Development Center, managed by the OEB, supervised the production of the initial plans by the Takayama Laboratory and the designs by Nikken Sekkei Komu, issuing the final plan in 1967.⁶⁴ Plexiglass models of the proposal were published in an article titled “Urban Structure and Construction: The Senri Newtown Central District Master Plan” in *Japan Architect* the following year, showing the designers’ emphasis on transparency, movement, and the role of the pedestrian within the city. As an urban structure that would “support the movement in the city,” Senri Chūō Center sat within a more conceptual framework than the smaller district centers.⁶⁵ The conceptual plan divides Senri Chūō into two parts, east and west, located just north of the major intersection of the Osaka Chūō Kanjōsen Belt Line and the Shin-Midosuji Line. High-rise office towers and low-rise office buildings were intermingled in the park-like western half while a civic center, parking, bus terminal, amusement center, and a long pedestrian shopping axis occupied the eastern half. The urban structure of the district center was conceived of as a single architectural unit because, as the article pointed out, “Architects today [in 1967], extremely sensitive to the movement of time, would find it most difficult to allocate several decades to the expansion and growth of a single urban image.”⁶⁶ Focused on the pedestrianized space as the jewel of the plan, the team placed it in the center of the plan where it would serve as a fixed, “non-equipmentalized” space that would contrast the dizzying change of commercial and automotive space. Transparency thus became possible through the “stabilized spatial

⁶² “The Senri New Town Central District Center,” 38.

⁶³ Takayama Laboratory, Tokyo University, “Urban Structure and Construction: The Senri Newtown Central District Master Plan,” *Japan Architect* no.137 (12, 1967): 14.

⁶⁴ “The Senri New Town Central District Center,” 61.

⁶⁵ Takayama, “Urban Structure and Construction” 15.

⁶⁶ *Ibid.*, 15.

experience” of the urban structure while movement created new space beyond the structure.⁶⁷ The 10.2-hectare western block was subdivided into three blocks for office buildings and an energy plant designed by Nikken Sekkei. It was set within a campus-like atmosphere accessed by pedestrian ways, although only one elevated crosswalk linked it to the commercial block to its east. This is due to the Shin-Midosuji Boulevard and Chūgoku Expressway, which created an enormous barrier between the office park and the commercial block that is the most impressive and active part of the design.⁶⁸

Senri Chūō Center was the apex of the Senri New Town project and the central block (as it was called) most clearly showcased the ideas derived from postwar CIAM. It was arranged axially along a large pedestrian mall that stretched from north to south and neighbored Higashimachi Park. It was flanked by the Shin-Midōsuji Line to its west and the Higashimachi Park to its east, connected directly by an elevated crossway. The central block (as it was called) was arranged axially along a large pedestrian mall that stretched from north to south and connected laterally to the park and the western office block. The most defining architectural element of Senri Chūō Center was the iconic Senchū Pal shopping mall that formed the central axis of the block, defining a series of public plazas and housing the Hankyū Railway and the Osaka Monorail stations. The building, designed by Nikken Sekkei and completed in 1970, provided space for numerous local shops and services lining the north-south axis. Inspired by the *shotengai* in Osaka, a “parallelogram grid” of columns formed bays that organized the building into rows of arcades opening towards the plaza.⁶⁹ Shops on the second level open up to two plazas, a small one located to the northwest of the building, and a larger one, called Selcy Plaza shared with the massive Selcy Building (1972) that formed the heart of the central district.⁷⁰ Meanwhile, a central staircase and escalator connected the shopping arcades with the rail station below ground where the concourse was

⁶⁷ Ibid., 16.

⁶⁸ “The Senri New Town Central District Center,” 38, 61. The south block, at only 2.2 hectares, is reserved for traffic facilities.

⁶⁹ Ibid., 40, 62. 8,900 parking spaces for shoppers in four separate parking buildings and two parking lots in the corner of the original plan.

⁷⁰ *Senri nyūtaun jōhōkan: riyō no goannai*.

visible from the shops elevated one story above. The Senchū Pal and Selcy Building framed the central pedestrian deck, which extended throughout the central block connecting to a nearby supermarket and the Hankyū Oasis building, marked by a striking steel façade of triangular trusses. It also interfaced with the Senri Chūō Chiku Sentā Building, designed by Maki & Associates from 1967 to 1968, and completed in 1970, provided city offices, shops, lounges, a wedding hall, banks, assembly halls, classrooms, and exhibition space among many other things. It was arranged in a pinwheel formation around a central circulation core.⁷¹ Although they recognized that Osaka would provide the majority of entertainment, shopping and work to Senri New Town's citizens, the design team intended for Senri Chūō Center to impart a "downtown," "liberal," and hard-working urban atmosphere, acting not only as a commercial center for the region, designed to meet the daily needs of surrounding residents, but also the "front door" to the new town.⁷²

The softscape of Senri New Town was as important in defining the quality of its environment as its hardscape.⁷³ The design team sought to foster community through the provision of open green space that could accommodate the postwar leisure and recreation that followed the rise of the *sarariman* lifestyle. Without this, Senri New Town would have quickly devolved into a large and dreary concrete landscape of apartment slabs. Instead, Senri New Town was an opportunity to provide the open green space that was lacking in Osaka city. The design team set aside 24% of the land, or 270 total hectares, for a greenbelt, parks and planted avenues to enrich the atmosphere of the new town. The greenbelt surrounding the new town was an element from the original design proposals and affirmed Senri New Town's connection with

⁷¹ Maki & Associates, "Senri sentā biru keikakuan [Senri Center Building Blueprint]," *Kenchiku Bunka* no.261 (07, 1968): 76-79; "Kaisha annai = Company Profile," *Yomiuri bunka sentā*, Yomiuri Bunka Center, accessed February, 2015, <http://www.yomiuri-bc.co.jp/info/index.php>. Sadly, this iconic building was torn down to make way for the 50-story luxury apartment tower in the 2000s. Across from the former footprint of Maki's building stands the Senri Life Science Center Building completed in 1992 and nicknamed the "poop" building by local residents for its distinctive shape. Not a part of the original plan, it replaced an earlier parking garage. Leaving only one original parking garage, two more were replaced by a bank and by the Yomiuri Bunka Center Hall, a very attractive brick complex completed in 1977 that houses community and cultural functions.

⁷² Ōsakafu, *Senri nyūtaun no kensetsu*, 16.

⁷³ Shigeru Yamamoto. *Nyūtaun saisei: jūkankyō manejimento no kadai to tenbō* [New Town Restoration: Living Environment Management Topics and Views] (Kyoto: Gakukei shuppansha, 2009), 15.

the garden city and new town movements. Together with a series of planted avenues where pedestrians could stroll, Senri New Town's green network covered a total of 168 hectares.⁷⁴ Still visible in satellite images today, the greenbelt demarcated Senri New Town from its neighbors, and echoed earlier garden suburb practices, expressing Japan's ongoing infatuation with the pastoral more than a commitment to the natural environment. Senri New Town's green infrastructure endowed the new town with a uniquely verdant urban environment that promised the health and vitality of modern living.

The greenbelt elegantly circumscribed the new town, imbuing it with a garden city atmosphere, but it did not create space for the important leisure and recreation activities that characterized modern life. Instead, a series of parks organized by scale and age group provided such space to residents. Planted avenues connected Senri New Town's three large parks, Senri Kita Kōen (Senri North Park), Senri Chūō Kōen (Senri Central Park) and Senri Minami Kōen (Senri South Park). Each was equipped with a pond, walking path, lawns, benches, and other recreation facilities designed to encourage a lifestyle of leisure. Senri Kita Kōen, the largest (23.6 hectares), housed a large pool and recreation facilities, as well as a south-facing sloped lawn, while the quiet Senri Chūō Kōen (7.1 hectares) offered a concert hall, walking paths, flowerbeds, and a viewing platform. Senri Minami Kōen (10.5 hectares) was much more active, with boating activities, a fountain, a large lawn and tennis courts. With pathways organically following the hilly, picturesque terrain around ponds and through lightly wooded areas, the naturalistic landscaping instantly created a feeling that Senri New Town was a part of nature, despite it being entirely remanufactured.⁷⁵ Smaller parks located throughout Senri in the various sub-districts, ranging from two to seven hectares each, reproduce these naturalistic gestures. They too typically had a pond, as well as sports equipment for children and exercise lots for adults. Together with the three district parks, these

⁷⁴ Ōsakafu, *Senri nyūtaun no kensetsu*, xx.

⁷⁵ *Ibid.*, 171-172. While there was interest in preserving the nature of the site as much as possible, with such a large-scale project constructed over such a short period of time, this was rather difficult to execute. The OEB opted instead to remanufacture a naturalistic and picturesque landscape in its parks by planting hundreds of thousands of trees, shrubs, and other plants.

fourteen neighborhood parks offered residents 84 hectares of open green space in which to play and relax.⁷⁶

To encourage the new town's youngest residents to participate in modern recreation activities, the design team also included a series of children's parks and play lots within neighborhood blocks, covering seventeen hectares in total. Overall, twenty children's parks and between 200~300 play-lots were provided. Each sub-district possessed one 2.5-hectare children's park, complete with softball and basketball courts, a trapeze, jungle gym, and slide. These smaller parks were often distinguishable through their names, which were written in the phonetic *hiragana* script (which is easier to read) rather than in *kanji* (pictograms borrowed from Chinese). Each *kinrin gurūpu* (neighborhood group) was equipped with play-lots, much tinier 300 square meter pocket-parks for babies and young children that contained things like sand pits, swings, trapezes, and benches for young mothers.⁷⁷ Sheltered by multi-story apartment buildings and surrounded by lawn, play-lots provided both a play space for very young children, a rarity in urban Japan at the time, and gathering space for young mothers. The provision of such a variety of open space from the greenbelt to the park to the play-lot was a luxury at a time when the polluted industrial city and the haphazard suburbs were wreaking havoc on the natural landscape and consuming any available public open space. The fact that much of the picturesque was entirely manufactured seemed to be of little importance and today this infrastructure has managed to preserve space that would otherwise have disappeared. It also created a unique identity for Senri New Town that celebrated the experience of the modernist living environment.

Senri New Town's environment (e.g. greenbelt, parks) and urban elements (e.g. civic and neighborhood centers) were not the only things that linked the project to new towns in Europe. Senri New Town structurally belonged firmly in the same canon, evident by the use of neighborhood units, superblocks,

⁷⁶ Ibid., 24-25, 168-172.

⁷⁷ Ibid., xx, 24-25, 168.

and neighborhood shopping centers in addition to civic centers and a greenbelt—all elements used in new towns like Vällingby and Tapiola. Even more importantly, it used the school district as a means of organizing the hierarchy of district types, a legacy of the role of the elementary school in centering the community within the Clarence Perry’s neighborhood unit in projects like Radburn, NJ.⁷⁸ This concept was incorporated into the new town through the work of Nishiyama, who was interested in how neighborhood units could be applied to cities and the Yoshitake Yasumi Laboratory at Tokyo University, who conducted research on the school district for the OEB.⁷⁹ Each *bunku* (sub-district) would typically contain one lower elementary school (grades one through two) and a public preschool while each *jūku* (neighborhood unit) would contain one upper elementary school (grades three through six). Two neighborhood units would share one junior high school (grades three through nine) while three senior high schools would serve the entire new town. This also allowed the designers of Senri New Town to correlate the infrastructure of daily life with different layers of the community. The district centers, for example, contained secondary, not daily, shopping, services, recreation, and assemblies, while the twelve neighborhood units, the primary building blocks of the plan, were the foundation of daily activity.⁸⁰

The *jūku* (neighborhood unit) formed the basis for town identity and neighborhood relationships in Senri New Town.⁸¹ They were the named districts of the new town, ending in either *-dai* (a typical prefix for neighborhoods meaning “platform” that alludes to the high ground where higher classes had traditionally

⁷⁸ Yamamoto, *Nyūtaun saisei*, 9.

⁷⁹ Hein, “Machi: Neighborhood and Small Town,” 93; Akiyama, “Modanizumu jappan 1950’s → 1970’s,” 153.

⁸⁰ Ōsakafu, *Senri nyūtaun no kensetsu*, 20, 46

⁸¹ Katayose, *Jikken toshi*, 114-120; *Senri nyūtaun jōhōkan: riyō no goannai*; Heikki von Hertzen, and Paul D. Spreiregen, *Building a New Town: Finland's New Garden City, Tapiola*. (Cambridge, Mass: MIT Press, 1971), 83-164. Senri was also constructed by neighborhood unit, which ultimately granted each neighborhood a unique character. Satakedai, in the southeastern thumb of Senri New Town, was the first neighborhood unit to open in 1962, followed by Takanodai and Tsukumodai in 1963, also in south Senri. By 1964, development of the north part of Senri began and Furedai and Fujishirodai opened while Aoyamadai opened a year later. Momoyamadai and Takemidai were the last neighborhood units in the south district to in 1967. The central district was the last to be constructed, with Shinseri-kitamachi and Shinsenri-higashimachi opening in 1966 and Shinsenri-nishimachi and Shinsenri-minamimachi opening in 1968. This is quite similar to the construction of Tapiola, which was also conceptualized and planned in terms of neighborhood units as well. Prominent architects from across Finland were given different portions of the neighborhoods, creating a rich palette of architectural styles and typologies across the new town.

lived) or *-machi* (“signifying both neighborhood and small town”).⁸² Each neighborhood unit centered on an upper elementary school (grades three through six) and a neighborhood park, fostering a sense of community around daily activities such as shopping, bathing, studying, exercise and play. They spanned roughly 100 hectares each and were bound by local trunk roads, serving a 500-600 meter radius sphere of 2,000 to 3,000 dwellings or 10,000 people.⁸³ Two to three neighborhood units, totaling 4,000 to 8,400 dwellings, or 20,000 to 30,000 people, shared one middle school, as well as a branch library, sports club, clinic, childcare facility, and insurance branch. This scheme recalls Radburn, NJ, a well-known precedent for Senri New Town that placed the child at the center of the community by organizing the neighborhood unit around an elementary school.⁸⁴ Most daily needs would be met at a smaller scale the neighborhood unit itself, but as Hein argues, there was a strong relationship between how Japanese planners, particularly Nishiyama, applied neighborhood units and the more traditional urban form of the *machi*. For Nishiyama, the neighborhood unit was quite important because it was a means to make urban life more livable and human-centered.⁸⁵

The nexus of daily life in Senri New Town took place on a smaller scale than the neighborhood unit, which was divided into smaller *bunku* (sub-districts) of roughly 1,000 dwellings or 4,000 to 6,000 people by neighborhood unit trunk roads and *kukaku gairo* (neighborhood block roads). Each sub-district was organized around the lower elementary school, coming together with another in the neighborhood units to share an upper elementary school. Depending on population density, the sub-district serviced a walkable radius of 300 to 500 meters that pivoted around the activities and scale of children. The facilities and

⁸² Hein, “Machi: Neighborhood and Small Town,” 75.

⁸³ “The Senri New Town Central District Center,” 73; Ōsakafu, *Senri nyūtaun no kensetsu*, 46, 168; Carol A. Christensen, *The American Garden City and the New Towns Movement*, (Ann Arbor, Mich: UMI Research Press, 1986), 58, 60. Radburn’s superblocks were also designed for no more than 10,000 people.

⁸⁴ Ōsakafu, *Senri nyūtaun no kensetsu*, 21, 27, 47. Osaka Prefecture makes specific references to Radburn not only in terms of the superblock and road layout designed to keep traffic on its periphery, but also in the provision of schools and markets within the superblock located at a reasonable walking distance from residents. They saw this as important to achieving an environment that would “protect human lifestyles.”

⁸⁵ Hein, “Machi: Neighborhood and Small Town” 99. The neighborhood unit could be applied to both new developments and existing cities, as Hein has shown.

public spaces at the sub-district level, such as the children's park or preschool, were constructed around the needs of young children and stay-at-home mothers, providing space for children to play and young housewives to "chit-chat." Subdistricts were composed of *kinrin gurūpu* (neighborhood groups)—typically a superblock of 50 to 100 dwellings arranged around a play-lot for children within a 100-meter radius, making it easy for mothers to keep an eye on their children.⁸⁶ This was also the scale that Nishiyama had believed was important for fostering strong relationships between neighbors (he termed this the *rinboku* or neighborhood block). He proposed that groupings of 30 to 80 households of the same class type—different social classes would intermingle on larger scales—would help to boost moral and promote "face-to-face" interactions.⁸⁷ High-density neighborhood groups were placed closest to the neighborhood centers, while single-family homes were placed at the periphery of the neighborhood unit, furthest from the neighborhood shopping centers; each neighborhood group would also have its own bus station. The neighborhood groups were essentially superblocks of homogenous dwelling types, or *danchi* (housing estates) as they were typically called elsewhere, that corresponded with land ownership and development. Because Senri New Town was developed primarily as a public housing project, several public entities such as the Japan Housing Corporation developed large *danchi* at once, contributing to a stark segregation of housing types at Senri New Town.⁸⁸ Although neighborhood units were the organizing unit, the sub-district and the neighborhood group were a reflection of the daily activities of the new town and of the pattern of its development.

The "heart" of the district was also repeated on a smaller scale in the pedestrianized *kinrin sentā* (neighborhood shopping centers) that acted as the architectural and community centerpiece of each of Senri's neighborhood units. From an architectural perspective, these were perhaps some of the most interesting areas in Senri New Town, as each one was unique and carefully crafted to house the elements

⁸⁶ Ōsakafu, *Senri nyūtaun no kensetsu*, 21, 47-48, 169, xxxii.

⁸⁷ Katayose, *Jikken toshi*, 114-115.

⁸⁸ Senri nyūtaun machibiraki 50-nen jigyo jikkō ōkai, *Senri Newtown Map*.

deemed necessary for daily life. Although original plans called for one neighborhood shopping center in each sub-district, in reality only one was provided for each neighborhood unit. Supermarkets and a variety of small retail shops were thoughtfully arranged around small plazas framed by *machiya*-style dwellings.⁸⁹ Civic necessities, like a police box, assembly hall, and post office could also be found here alongside medical clinics, and in the first half of Senri's history, public baths.⁹⁰ The public space between the shops was equipped with benches and trees, creating a friendly space for housewives during the day and festivals or other community activities on special occasions. The neighborhood shopping center at Satakedai is one such example. Two rows of shops constructed of concrete and cantilevered to form an arcade, framed a small plaza that was distinctively modern and brutalist in quality. Momoyamadai and Takemidai were arranged quite differently, with shops breaking out of the linear pattern to compress in the center and expand on the edges, creating two intimate plazas. The inclusion of a nicely situated tree in front of the supermarket, as well as the provision of steps and benches, made these neighborhood shopping centers feel both airy and inviting.⁹¹ Although the neighborhood shopping centers did not become as successful as hoped, they reflected a careful consideration by the design team of the residents' daily needs and the scale the community in the 1950s and 1960s. Rapidly changing technology and the rise of the automobile has radically shift the ways in which residents form community and participate in daily functions. Nevertheless, at the time of Senri New Towns construction, the neighborhood shopping centers addressed a modernist vision of a rationally and functionally organized community, as well as a very pragmatic need to make daily necessities and community available at a walkable scale.

⁸⁹ *Machiya*-style dwellings are traditional live-work dwellings, with a shop at the front of the building and dwelling behind or above it.

⁹⁰ Ōsakafu, *Senri nyūtaun no kensetsu*, xxxii; Marilyn Ivy, "Formations of Mass Culture," in *Postwar Japan as History*, ed. Andrew Gordon, (Berkeley: University of California Press, 1993), 249; "Sento History," *Tokyo Sento: Public Bath*, Tokyo Sento Association, accessed June, 2015, <http://www.1010.or.jp/english/sento-history/>. Ivy points out that a private Japanese-style bath was one of the iconic possessions of the postwar middle class. In Senri New Town, private baths were added later. When it was initially built, many units did not have private baths, and instead residents were expected to walk to the neighborhood centers, where a community bath, called *sentō*, was provided. *Sentō* have a long history in Japan, dating back possibly to the classical period.

⁹¹ Ōsakafu, *Senri nyūtaun no kensetsu*, xxxii, 158-159.

The Modern Apartment Dwelling in Senri New Town

Because Senri New Town was designed to be a commuter city, not an economically independent satellite city, the district centers and neighborhood centers were meant to support a design oriented around the provision of a modern and hygienic residential environment for its 150,000 residents. As such, all of its elements—even its district centers and parks—were in service of the residential environment. Although the area for residences was on par with Osaka City (44%), the priority placed on green space (24%) came at a cost to commercial, industrial, and institutional space (11%).⁹² In comparison, Osaka left very little open space for its urban residents, and most of the agricultural land left in 1960 had disappeared by 1970.⁹³ The challenge in Senri New Town was to produce large quantities of housing at a density comparable to Osaka City, which by 1965 had topped 140 people per hectare, while still leaving enough open green space to create a garden city environment.⁹⁴ To achieve this, Senri New Town mixed both mid-rise and low-rise apartment dwellings, as well as single-family homes, achieving an overall density of 120 people per hectare.⁹⁵ The luxurious provision of open green space around the dwellings, and the subsequent reduction in land reserved for commercial and industrial functions resulted in an environment that was quintessentially suburban and domestic. Senri New Town acted as a domestic hub, providing not only housing, but also a lifestyle that promoted health, leisure, and community.

In Senri New Town, the OEB hoped to build a robust residential community by mimicking the class structure of the typical city, but the scale, scope, and timeframe of the project made such nuances challenging in reality. The original intention of randomizing housing placement proved to be too difficult for various reasons and the housing typologies intended for different class levels were eventually

⁹² Tenda, “Senri nyūtaun no kore made to kongo,” 19.

⁹³ Fujita and Hill “Together and Equal,” 118. Osaka allocated 26% of land area to commerce and industry and 45% to housing in 1960. By 1970, 37% was allocated to commerce and industry, and 50% to housing. Between 1960 and 1970, agricultural land was reduced from 21% to 8%.

⁹⁴ Ministry of Internal Affairs and Communications: Statistic Bureau, “2-7 Population, Population Density, Population of Densely Inhabited Districts and Area by Prefecture, All Shi and All Gun (1898--2005),” *Chapter 2 Population and Households*, accessed February, 2015, <http://www.stat.go.jp/english/data/chouki/02.htm>.

⁹⁵ Ōsakafu, *Senri nyūtaun no kensetsu*, 19.

streamlined and organized to neighborhood groups of homogenous dwellings, allowing for easier land acquisition, construction and management.⁹⁶ Dwellings in Senri New Town fell into four general categories: public housing, condominiums, company dormitories, and single-family homes. In 1971, public housing made up 58.5% of the housing market in Senri New Town, most of which was intended for low or middle-class working families. Some of these dwellings were high-rise and low-rise apartments but, the bulk of them were either mid-rise apartment dwellings or single-family homes sold or leased to working class families by public corporations, such as the Japan Housing Corporation and the Osaka Prefectural Housing Corporation (OPH). Public housing could be divided into three sub-groups, each administered by different governmental agencies. Of the 23,470 public housing units constructed in Senri, 10,500 were low-rent apartments, called *kōei jūtaku*, built by local public agencies using central government funds for low-income earners. An additional 9,120 housing units, called *kōdan jūtaku*, were constructed by the Japan Housing Corporation, while the remaining 3,850 dwellings, called *kōsha jūtaku*, were built by the OPH. In addition to public housing, 6,300 company dwellings were provided for company or governmental employees, as well as 2,785 high-rise units, 1,974 low-rise units, and 3,520 terrace houses (these sold poorly).⁹⁷ The makeup of dwellings adequately provided space for middle-class households but the oversimplification of housing provision resulted in a dissappointingly homogenous residential landscape.

Public housing construction in Senri New Town relied on many of the techniques pioneered by the JHC in its *danchi* (housing estates) across the nation, which had a strong impact on the outcome of Senri New Town's residential environment. Most public housing in Senri New Town, roughly 64% (14,751 housing units), consisted of three to five-story mid-rise flats constructed of concrete or steel. A lot area of 83 square meters (reduced from 115.5) was allocated per building, which would be grouped with other buildings of a similar type with a neighborhood group, penetrated only by pedestrian pathways or cul-de-

⁹⁶ Ibid., 47-49.

⁹⁷ Ōsakafu, *Senri nyūtaun no kensetsu*, 27, 71-80; Tenda, "Senri nyūtaun no kore made to kongo," 20.

sacs, as in Clarence Stein's plan for Radburn. Depending on density and building height, 100 to 200 dwellings were repetitively arranged in various formations within large expanses of lawn. Early intentions to orient apartments to the south created a variety of problems within the blocks, such as dull scenery, limited privacy, and poor quality public space. This drove experiments within the blocks using orientation, pedestrian pathways, and landscaping to generate semi-public space between the apartment slabs. Local public housing agencies began to experiment with parallel, box, and T-shaped formations of *Kōei jūtaku* (public housing units) in 1962 to create more verdant and social spaces.⁹⁸ The JHC was also concerned with the quality of the public space around the buildings, experimenting with different ground treatments such as the use of pilotis, podiums, and plazas, using building arrangement to enhance the quality of public space and reconcile box buildings with the sloped topography.⁹⁹ Senri New Town became an ideal opportunity for the JHC and local public housing agencies to test theories and technological innovations on a large scale, many of which are now ubiquitous in Japan today.

The JHC, Osaka Prefectural Housing Corporation (OPH) and other local public housing agencies were also concerned with innovation within the dwelling. Most public housing units at Senri New Town were iterations of the nDK Apartment system that grew out of the Yoshitake Laboratory's 51C Apartment prototype and belonged to the JHC's "high-development" period (1955-1973) characterized by "orderliness, rationality, and pleasantness."¹⁰⁰ Efficient, safe, and affordable, the nDK Apartment cultivated a modern lifestyle of hygiene, morality, and leisure within a functionally and rationally designed space that could be easily deployed on a mass scale. This typology rejected the "indigenous and

⁹⁸ Ōsakafu, *Senri nyūtaun no kensetsu*, 27, 47-48, 74-78; Waswo, *Housing in Postwar Japan*, 52. Local public agencies, mostly prefectural, built two different types of *kōei jūtaku* (low-income public housing). The local government constructed these apartments using funds allocated by the 1951 Public Housing Law. The central government covered half of the cost of 81% of *kōei jūtaku*, intended for families earning between 20,000 and 36,000 yen per month (in 1970?). For the remaining 19%, constructed for families earning less than 20,000 yen per month, the government covered two-thirds of the cost.

⁹⁹ Ōsakafu, *Senri nyūtaun no kensetsu*, 78.

¹⁰⁰ Haihong Lai and Keizou Nakamura, "Sengo kukkōki to kōdo keizai seichōki no nihon jūtaku kōdan jūko no kenkyū – 1945nen ~ 1973nen made no madori kōsei no bunseki [Study on the Public Houses of During the Period of Recovering After War and Period of High Development in Japan - Analysis on the Plan Composition of Houses from 1945 to 1973]," *Ashikaga kōgyō daigaku kenkyū shūroku* 26 (March 1998): 193-195.

traditional, non-democratic” modes of living common until the postwar period.¹⁰¹ It became the prototype for dwelling units employed not only by the JHC, who had spent the 1950s and 1960s refining the system, but also by the OPH, local housing authorities, and eventually even private developers. To some extent, the thinking of the nDK Apartment even appeared in postwar single-family dwelling catalogues that advertised Senri New Town to prospective buyers. The nDK Apartment would not only elevate the standard of living, but define it in terms of a new vision for the middle class.

Although Senri New Town was predominately built for the middle and working classes, it also made some provisions for lower income residents, for whom the smallest units were generally reserved. Until 1963, all of the *kōei jūtaku* (public housing) were 2DK units typically housed in slab buildings. The standard area for “type one” *kōei jūtaku* units throughout Japan at the time was either an average of 33 square meters when constructed of wood, or 46 square meters when constructed of concrete. The standard for “type two” units were even smaller, averaging 26 square meters when constructed of wood or 33 square meters when constructed of concrete.¹⁰² These areas were increased in Senri New Town to 40-41 square meters before 1963 and 49-52 square meters after that. This was even smaller than the 54 square meter average unit size in Osaka at the time according to the 1963 census.¹⁰³ The units were directly accessed from a central stairwell. A *genkan* (entryway) opened into a dining-kitchen floored with boards or other modern materials and equipped with a modern standing kitchen unit. Directly adjacent to the dining-kitchen would be a water closet with a Western-style flush toilet and two *tatami*-floored bedrooms partitioned with *fusuma* (movable screens) for ventilation. A third room was added to *kōei jūtaku* units in 1963, increasing the floor area to 49-52 square meters. Each unit would, in principle, also have a balcony that faced south when possible. As Ann Waswo notes, this limitation on size “was a reflection of the

¹⁰¹ Eizō Inagaki, *Nihon no kindai kenchiku* [Modern Architecture of Japan], (Tokyo: Chuokōrin bijutsu shuppan, 2009), 333-332.

¹⁰² Ōsakafu, *Senri nyūtaun no kensetsu*, 76. *Kōei jūtaku* were public housing units provided to low-income households by local public housing authorities under the 1951 Public Housing Law.

¹⁰³ Ōsakafu, *Senri nyūtaun no kensetsu*, 77, and Ministry of Internal Affairs and Communications: Statistic Bureau, “21-7 Dwellings by Tenure of dwelling, Prefecture, and Size of Dwelling (1948--2008),” *Chapter 21 Housing*, accessed February, 2015, <http://www.stat.go.jp/english/data/chouki/21.htm>.

Construction Ministry's desire to maximize the number of units it could subsidize with available funding so as to have the greatest possible impact on the continuing housing shortage," as well as of larger social attitudes that did not recognize the need for minimum standards of living for the nation's poor.¹⁰⁴ At Senri New Town, the *kōei jūtaku* established the minimum baseline for dwelling accommodations.

The majority of dwellings at Senri New Town were targeted at middle-class, white-collar households, to whom only slightly larger units and more variations were available. OPH housing, or *kōsha jūtaku*, for example, had more spatial variety than *kōei jūtaku*, and were primarily intended to house middle-class working families who had difficulty finding reasonable alternatives in the city. Nevertheless, they too proved to be too cramped for most families. Until 1965 when the floor area increased to 58 square meters, *kōsha jūtaku* units averaged 49.5 square meters, depending on the unit type. The OPH initially mass-produced three unit types based on a unit prototype called the 15T, arranging them into five to thirteen-story blocks: the A-type, a 41 square meter 1DK, the B-type, a 47.5 square meter 2DK, and C-type, a 55 square meter 2DK.¹⁰⁵ *Kōsha jūtaku* were more elaborate in layout than *kōei jūtaku* and included new features, particularly bathrooms (referring to tubs, which were a luxury at the time) and living rooms, but they still followed a standardized layout.¹⁰⁶

The most pervasive influence on the residential environment of Senri New Town was the JHC, who built the majority of public housing units. It also targeted its *kōdan jūtaku* at middle-class workers, resulting in many similarities with the OPH's *kōsha jūtaku*. Most JHC housing was around five-stories tall, although beginning in 1965 some flat and box style apartments reached above eleven stories. Flat style apartments were typically steel frame and reinforced concrete clad in tile with an attached elevator. Cost efficiency also drove the JHC to use mass-production techniques, metal-form construction, and precast concrete.

¹⁰⁴ Ōsakafu, *Senri nyūtaun no kensetsu*, 77-78; Waswo, *Housing in Postwar Japan*, 52, 71-72.

¹⁰⁵ Ōsakafu, *Senri nyūtaun no kensetsu*, 80-81; OPH Post-Rehabilitation Rental Housing Pamphlet, 2008, 15-17, Senri New Town Information Center. The 15T-3, 15T-4, and 15T-5 were used as models for OPH housing.

¹⁰⁶ OPH Post-Rehabilitation Rental Housing Pamphlet, 2008, 15-17. These types have now been renovated so that Western-style rooms could replace Japanese-style rooms.

Technological innovation driven by efficiency, in fact, was a priority for the JHC, which saw these projects “as a test case today for the increasing density of urban residents who desire a good living environment.”¹⁰⁷ Because the JHC imagined its demographic to be somewhat varied, they provided a range of different types (1DK, 2DK, 2LDK, 3K, 3DK, 4K, etc...) in order to improve the quality of life for residents. Each unit, regardless of size, provided the requisite modern components listed above, such as a balcony, bedrooms, *genkan*, laundry hookups, a flush toilet, and a bathroom. Balconies here were also affixed to the south side of the dwelling to allow for four hours of sunlight daily.¹⁰⁸ The JHC was also instrumental in the cultural shift from public bathhouses to private bathrooms in the 1950s, which were “made possible by the creation to JHC specifications of a small gas-fired water” that could be used in these tiny apartment dwellings. This eliminated the inconvenient daily trip to the neighborhood shopping center to visit the public bathhouses.¹⁰⁹ The JHC also saw the dining-kitchen (and later living-dining-kitchen) room as the heart of modern family life, where the imagined family of four could “sit together” in chairs around a dinette, enjoying each other’s company without the “strict lining up of order of seniority that prevailed” before.¹¹⁰ The *kōdan jūtaku* were meant to cater to the new middle class lifestyle.

In addition to public housing, Senri New Town also made space for neighborhood groups of single-family dwellings in order to better reflect the existing demographic of the Osaka region, as well as growing homeownership rates. Large blocks of single-family homes also served as a counterbalance to the homogeneity of public housing. The inclusion of single-family homes in a new town intended to house high densities of middle-income workers was not simply a matter of creating space for diversity in Senri

¹⁰⁷ Ōsakafu, *Senri nyūtaun no kensetsu*, 79.

¹⁰⁸ Ibid., 79, 82.

¹⁰⁹ Shigeru Yamamoto, in discussion with the author, August 1, 2014. Because many early public housing units did not have private bathtubs, they had to be added to the units later.

¹¹⁰ Waswo, *Housing in Postwar Japan*, 84.

New Town, as might be suggested by some of the texts produced by Osaka Prefecture at the time.¹¹¹ Rather these dwellings indicated a continued preference for single-family homes rooted in the early twentieth century. Furthermore, construction of a new single-family home would have been appealing in a place like Senri, as financing through the Housing Finance Bank established in 1950 was generally only available for new construction, thereby eliminating any economic advantage of buying an older home in the city, according to Waswo. Furthermore, she emphasizes, it was the land, rather than the house itself that had long-term economic value.¹¹² Nevertheless, more was at stake than the value of land that would have necessitated the construction of so many single-family homes in Senri New Town. Homeownership before World War I had been relatively uncommon, as most dwellings in the city were possessed by landlords and rented out at that time; but following the establishment of Takarazuka by Kobayashi Ichizō, Japan's first suburban rail development, ready-built houses were heavily advertised and could even be paid for in installment plans that were manageable for professional-class families. This began the steady march towards homeownership in twentieth century Japan. Sand remarks that "the suburban spec-built house put its occupants in a new relation to the dwelling site, different from either the transiency of the urban tenant or the multigenerational stability of the landed peasant household."¹¹³ By the 1930s, an increasing number of the professional-class owned homes in the growing suburbs around Japan's major cities, such that over 20% of dwellings were owner-occupied, although this rate was actually much lower in Osaka, where 90% of dwellings were rented.¹¹⁴ This foreshadowed Senri New Town's single-family dwellings, replacing the stability of the *furusato* (hometown or native place), with modern ideals of hygiene, independence, social status, leisure, and domesticity. This was the birthplace of the modern, middle-class lifestyle.

¹¹¹ Ōsakafu, *Senri nyūtaun no kensetsu*, 47-49.

¹¹² Waswo, *Housing in Postwar Japan*, 90-91.

¹¹³ Jordan Sand, *House and Home in Modern Japan: Architecture, Domestic Space and Bourgeois Culture 1880-1930*, (Cambridge, Mass: Harvard University Press, 2003), 123, 134-137.

¹¹⁴ Sand, *House and Home in Modern Japan*, 256, and Waswo, *Housing in Postwar Japan*, 40.

The construction of single-family homes in Senri New Town paralleled a national trend that saw the rise of homeownership during the postwar and high-growth periods. Homeownership rates began to rise significantly only after 1945, as company housing went into decline at the same time as in-house home loan programs were on the rise. Simultaneously, consumers were also hit with well-strategized marketing campaigns to purchase ready-built homes or condominiums. In 1950 the state-run *Jūtaku kinyū kōko* (Housing Finance Bank) was established to provide low-interest bank loans for new housing construction. (Waswo points out, however, that these loans were only available for construction cost, not land, making homeownership only accessible to families of above-average means). Coupled with the dramatically rising cost of rent in the overcrowded cities, Waswo argues that now residents could be persuaded that home ownership would cost little more than renting.¹¹⁵ By 1965, privately owned dwellings finally became the norm in Japan.¹¹⁶ According to the Japanese census, 58% of all households lived in privately owned dwellings at this time, a statistic that remains relatively constant down to the present day. Furthermore, single-family homes offered more space and privacy than multi-family apartments. In fact, early single-family homes in Senri New Town tended to be quite generous compared to apartment dwellings, ranging anywhere from 50 to 700 square meters, making them rather appealing to families who could afford them. This was in line with the national pattern, as the number of rooms per household was much higher for those who owned dwellings (4.47 rooms in 1965) than those who rented dwellings (2.17) or rooms (1.32).¹¹⁷ Single-family dwellings offered privacy both within the home from family members, and also privacy from neighbors, a phenomenon that was relatively new at the time and growing in importance. This, along with the safety of single-family dwellings, both from earthquakes and fires as

¹¹⁵ Waswo, *Housing in Postwar Japan*, 50, 93-95.

¹¹⁶ Ōsakafu, *Senri nyūtaun no kensetsu*, 77.

¹¹⁷ Ministry of Internal Affairs and Communications: Statistic Bureau, “21-10 Private Households and Household Members, Rooms per Household and Area of Floor Space per Household, by Kind of Residence and Tenure of Dwelling (1960--2005),” *Chapter 21 Housing*, accessed February, 2015, <http://www.stat.go.jp/english/data/chouki/21.htm>.

well as for raising children, helped to transform the single-family dwelling into the ideal home in the postwar period.¹¹⁸

Senri New Town reserved a substantial number of neighborhood groups for single-family dwellings, which took up 14.4% of the housing stock, but a much greater proportion of land. By the time Senri was completed, 5,780 single-family dwellings had been constructed.¹¹⁹ Like multi-family housing, single-family dwellings were organized into large, homogenous superblocks, but were located furthest from the district and neighborhood centers along the periphery of each neighborhood unit. The dwellings were densely packed—by American but not Japanese standards—into net lot areas of 264-330 square meters (gross 330-429 square meters) depending on how they were sold. Families had five different options to purchase a house: they could purchase the lot and build their own house (with no size or construction limitation); they could choose a house designed by the OEB from a catalog; they could purchase a ready-built house; they could purchase a house with an attached shop (*machiya*) in or near the neighborhood center; or they could purchase a condominium dwelling in a four-story reinforced concrete building. The dwellings were constructed of either wood, reinforced concrete or prefabricated concrete panels, which was generally carried out by major construction firms like Ekon, Sekisui, Daiwa, Denken, or Matsushita in roughly a month under the administration of the prefectural building department, OPH, or the JHC (not the OEB itself).¹²⁰ Neighborhood groups of single-family dwellings contributed as much to the modern character of the new town by making ownership of modern, standardized homes available to the middle-class of Osaka.

Like the public housing units, single-family homes at Senri New Town followed standardized design patterns. Other than self-built homes, early single-family dwellings in Senri New Town followed the dining-kitchen pattern that was popular at the time. Like the multi-family units they articulated the

¹¹⁸ Waswo, *Housing in Postwar Japan*, 114.

¹¹⁹ Tenda, “Senri nyūtaun no kore made to kongo,” 20.

¹²⁰ Ōsakafu, *Senri nyūtaun no kensetsu*, 74, 83-86.

separation of kitchen-dining space from sleeping space through room placement, although more variations were available. The kitchen and dining room generally formed the heart of the home, while toilets, bathtubs, and laundry machines would be blocked together. Bedrooms, typically with tatami flooring and Japanese-style closets, were generally on the edges of the dwelling.¹²¹ A 1967 pamphlet published by the OEB shows the varieties of designs made available to new residents that were derived from these basic principles. The floor plans were categorized using a numbering system that indicated the material type, the floor area, and layout type. For example, W18-A2 referred to an 18-tsubo (59.5 square meter) wooden dwelling arranged in the A2 type, which stacked the bedrooms on one side of the central kitchen and dining area and the entryway, bathroom, and laundry functions on the other side. The R20-S1, on the other hand, refers to a 20-tsubo reinforced concrete dwelling arranged in the S1 type. The kitchen and dining room were still central, but the bedrooms were placed at the front of the house rather than the side, with the entryway, bathroom, and laundry functions located at the back of the dwelling.¹²² Quintessentially modernist in design, these layouts reflected a new standard of postwar domestic aspirations.

The dwellings at Senri New Town reflected larger changes in Japan's housing stock following the war. Sand shows that by the postwar period, many of the vernacular features found in early single-family dwellings had all but disappeared. For example, the generous *genkan* (entryways) of the early modern period had been reduced to small, unenclosed entryways with a swinging Western-style door. The kitchen and dining space had also been fully modernized so that the kitchen would be compact and efficient while the dining space, floored with wood, was designed for chair-based furniture, emphasizing the role of family meals in the home. Aluminum sash glass doors and concrete terraces replaced the *engawa* that had formerly wrapped around the house. The home, remarks Sand, was no longer intended

¹²¹ Ibid., 85-86.

¹²² *Senri kyūryō jūtaku chiku: bunjō jūtaku heimen zushū* [Senri Hills Residential District: Collection of Residential Floor Plans for Sale], (Osaka: Ōsakafu kigyōkyoku, 1963), Senri New Town Information Center.

for guests, but for the family alone, abandoning the more traditional reception room and “distinctions of frontstage and backstage in the dwelling.”¹²³ Indeed, the single-family homes built in Senri had become quite introverted, leaving no space for socializing within the home. The spatial character of the dwellings as well as their distance from the neighborhood centers reflected the relegation of community completely to public space by the designers. The home had become the private castle of the *sarariman*.¹²⁴

These changes in the dwelling also reflected a growing discourse of the homogenous middle class, as historian Laura Nietzel has shown. She remarks that, “if ‘middle class’ once stood for exclusivity and efforts by the self-identified middle class to differentiate themselves by a certain lifestyle and set of values, after the 1960s, it became a marker not of difference but of consensus and sameness,” even while this sameness largely remained a myth.¹²⁵ Nietzel sees this phenomenon reflected directly in the construction of postwar *danchi* apartments of the postwar period, which she asserts physically and ideologically “mediated” this social transition. Describing this, she writes:

Literally cast in concrete, *danchi* apartments were mass-produced, standardized consumer goods. As a metaphor, they represented prosperity and the promise of equality. Although difference and inequality remained, standardization helped mask their physical markers and contributed to perceptions of ‘equal lives.’¹²⁶

It did this by placing the idealized nuclear family within a standardized nDK apartment unit that she claims was an acronym for the family itself. Senri New Town partook of this standardization on many

¹²³ Sand, *House and Home in Modern Japan*, 375-376,

¹²⁴ William W. Kelly, “Metropolitan Japan,” in *Postwar Japan as History*, ed. Andrew Gordon, (Berkeley: University of California Press, 1993), 203-204, 468. *Sarariman* (salaryman) is the term in Japanese used to refer to salaried middle-income men who often were employed by large organizations. The characterization of the *sarariman*, who was often a hapless creature who commuted to and from the city each day and worked long hours, extended to the middle-class family (the professional housewife and school children), which was gradually being standardized along with the life-cycle of the average *sarariman*, as Kelly points out. The characterization of the *sarariman* was solidified through the work of James Abegglen, who proposed a model of the “traditional” Japanese firm as one characterized by “lifetime employment pay and promotion by seniority, entry from the bottom, and enterprise unionism.” This interpretation proved to be quite popular and the *sarariman* came to be seen as mark if Japanese exceptionalism. However, as Kelly reminds us, Japanese families in the postwar period were far more varied and the definitions of the middle-class male and the middle-class family, as well as what was “traditional” in Japan were still in a state of negotiation in the decades following the war.

¹²⁵ Laura Neitzel, *Living Modern: Danchi Housing and Postwar Japan*, (Ph.D. Dissertation, Columbia University, 2004), 87.

¹²⁶ *Ibid.*, 91.

scales, from the urban to the domestic. It presumed patterns of living associated with an imagined lifestyle common to the new middle class, and in doing so, perpetuated the myth of its commonality and equality even more. The *danchi*, the dwelling, and the consumer good were all synonymous with the middle-class identity, directly contributing to its construction and standardization in the 1960s.¹²⁷

The Status of Appliances and Quality of Life in the Modern Dwelling

Modern living at Senri New Town represented not only new spatial paradigms, but also a new relationship with the objects of everyday life, particularly the appliance. In 1960, the Japanese government initiated the National Income-Doubling Program, spurring rapid economic growth and technological innovation that corresponded with the compelling myth of Japan's growing "middle class."¹²⁸ Carol Gluck points out that in reality most Japanese households did not conform to the homogenizing discourse or "consuming images they saw in commercials" at the time. Nevertheless, the postwar new towns became fertile ground for experiments in the new consumer paradigm and later representative of the "rich Japan, poor Japanese" phenomenon that characterized the conflict between rapid national economic growth and a private reality.¹²⁹ Because of this discourse, Senri New Town's design team touted the novel amenities featured in the apartments and single-family homes built throughout the new town. While the central and municipal governments around Japan could not so easily manufacture a homogenous middle class as it purported to do, through the new towns and the nDK Apartment, it was able to put into practice its vision of a the new consumerist lifestyle, defined by modern kitchens, modern hygiene, and the modern appliance.

Unlike those in the rapidly growing suburbs, each dwelling unit in Senri New Town contained private kitchens and toilets, as well as lighting, ventilation, and vegetation meant to improve the standard of

¹²⁷ Ibid., 88-94.

¹²⁸ Inagaki, *Nihon no kindai kenchiku*, 324.

¹²⁹ Carol Gluck, "The Past in the Present," in *Postwar Japan as History*, ed. Andrew Gordon, (Berkeley: University of California Press, 1993), 75-76.

living for residents. In order to accomplish this, one of the most important measures undertaken at Senri was the provision of water and sewerage services, enabling the installation of sinks and private toilets within each dwelling.¹³⁰ The inclusion of a stainless steel sink in nDK-style dwellings was a particular point of pride for the JHC at this time, as it had introduced its mass-production in 1958.¹³¹ Modern appliances made lifestyles more convenient and stainless steel sinks and toilets made them more hygienic. Along with gas burners and exhaust fans, the stainless steel sink radically transformed the modern kitchen into a sleek, clean, and efficient modular unit that freed the kitchen from smoke and made cleaning much easier than in the traditional kitchen. Although dwellings and office buildings had been affixed with flushing toilets for quite some time, the JHC's great contribution to the postwar dwelling was Western-style toilets located in a wash closet adjacent to a small hand sink.¹³² Such innovations, like the inclusion of sanitary flushing Western-style toilets, the bathtub, and stainless steel sinks, were a symbol of reform and modernization.¹³³

These innovations had a dramatic impact on the way Senri New Town was conceived and experienced. Tiny and quite isolated from shared facilities that might be found in inner-city *nagaya* or in the suburbs, new town dwellings were more receptive to a lifestyle dependent on modern technologies and appliances, which could free up both space within the cramped household as well as create more personal time for housewives. Japan saw an explosion of new consumer goods on the market. In historian John W. Dower's words, this was:

“the ‘age of the electrified household’ (*katei denka no jidai*) ...said to have materialized in 1955, [in] which housewives dreamed of owning the ‘three divine appliances’ (*sanshu no jingi*)—electric washing machines, refrigerators, and television—and magazines spoke of the seven ascending stages of household electrification: (7) electric lights, (6) radio

¹³⁰ Ōsakafu, *Senri nyūtaun no kensetsu*, 75-76.

¹³¹ Shigebumi Suzuki, *Sumai no keikaku, sumai no bunka: suzuki shigebumi jūkyō ronshū* [The Design of Dwelling, the Culture of Dwelling: Suzuki Shigebumi's Treatise on Dwelling] (Tokyo: shōkokusha, 1988), 25.

¹³² Waswo, *Housing in Postwar Japan*, 75.

¹³³ Nihon jūtaku kōdan, *Nihon jūtaku kōdanshi*, 9.

and iron, (5) toaster and electric heater, (4) mixer, fan, and telephone, (3) washing machine, (2) refrigerator, and (1) television and vacuum cleaner.”¹³⁴

These goods revolutionized domesticity in Japan, at Senri New Town where a reliance on new appliances within the home was eagerly anticipated, even in the early stages of planning. An energy plant in the central district was built, as well as a number of service centers and gas facilities, to supply electricity and gas to all of the new dwellings, attests to the burgeoning of consumer society.¹³⁵ The OEB and JHC marketed their project with such language as, “‘Housewives’ time. To flowers, tea, calligraphy, Noh [a traditional form of Japanese theatre]... Housewives enjoy their own time for a moment. From a place like this, new emigrants to the city grow mutual respect, a new community is formed,” illustrating the relationship between the appliance, the housewife, and the coveted free-time of the modern lifestyle.¹³⁶ Such statements alluded to a new lifestyle of leisure made possible by new technology and appliances. Modern appliances, like washing machines and rice cookers, allowed the postwar housewife to spend less time on chores and more time on leisure and childcare, which were both considered to be her central activities at the time. The electrification of mass housing would have made this lifestyle shift far easier for residents living in new towns than in older homes in the city.

A pamphlet, entitled *Senrinyūtaun: hito to seikatsu* [Senri New Town: People and Lifestyle] published by Osaka Prefecture in 1973 advertises the lifestyle of Senri New Town residents, peppering the text and imagery with references of the convenience and joy of these new appliances. For example, the second half of the pamphlet, called “Family Lifestyle” illustrates the daily lives of two, presumably fictional, families living in Senri New Town. Images of the first family show a television set, vacuum cleaner, telephone, various kitchen appliances and a bathtub. The family is shown enjoying meals together prepared by a mother who has time for both housework and leisure, particularly chatting on the telephone nightly with a

¹³⁴ John W. Dower, “Peace and Democracy in Two Systems,” in *Postwar Japan as History*, ed. Andrew Gordon, (Berkeley: University of California Press, 1993), 17.

¹³⁵ Ōsakafu, *Senri nyūtaun no kensetsu*, 191-195.

¹³⁶ *Ibid.*, lxxiii.

childhood friend. After supper, the family also regularly watches television together, an activity the mother continues while ironing after the children go to bed. The second family, which is slightly older than the first, is more independent. While the children and father have commuted to the central city for work and school, the mother enjoys a leisurely day at the hair salon or cultivating her hobbies. Before turning on the lights to stay up late studying, the family comes together for a relaxing evening meal, which they enjoy while sitting in Western-style couches. Despite their busy lives, they also find time to watch television together and to enjoy the park as a family on weekends.¹³⁷ Such images illustrate the overarching qualities and aspirations of Senri New Town, as well as the nation.

The modern appliance also served as a status symbol, marking one's inclusion in the middle class. Incidentally, this trend also encouraged massive levels of domestic consumption, fueling the high-speed growth economy. "Electronic appliances standardized the image of the average household and what the average housewife should possess," notes anthropologist Marilyn Ivy, who goes on to explain that,

Not only did they become the standard for middle-class status, but their presence and placement within Japanese dwellings (standardized in the form of housing projects, or *danchi*) also homogenized Japanese domestic space, which became a 'concrete metaphorical scene' of social equality: if every household contained the same electric appliances in similarly constricted domestic spaces, then households were democratically equalized.¹³⁸

This is quite similar to the way the layouts of both unit interiors as well as public space served to homogenize the middle class households at Senri New Town. These various scales of homogenization, from the appliance to the unit to the communal, showed that the municipal governments working on postwar new towns in Japan were not designing for a middle class that already existed. The design of the new towns themselves became a mechanism through which the modern middle-class in Japan was defined and manufactured.

¹³⁷ COM keikaku kenkyū shitsu, *Senriyūtaun: hito to seikatsu*.

¹³⁸ Ivy, "Formations of Mass Culture," 251-250.

Senri New Town was an unprecedented social, urban, and architectural endeavor for Japan. It offered significant opportunity for experimentation, as Katayose has shown, and showcased the nation's most ambitious public housing visions. On an international scale, it was a quintessential new town, incorporating the civic center proposed by CIAM, the neighborhood unit of Radburn, and new town principles developed in projects such as the new towns of the Greater London Plan 1944 and Vällingby near Stockholm. In doing so, it imagined a residential environment defined by community, convenience, and open space and organized according to rational, modernist principles. At the same time, as a collaboration between the Japan Housing Corporation, the Osaka Prefectural Public Enterprise Bureau, and academic and professional institutions, it was heavily influenced by the urban theories developed by professors and architects at Japan's most prominent universities, Tokyo University and Kyoto University, most notably Nishiyama Uzō and Takayama Eika. It utilized a formal, rational strategy of clustering a hierarchy of urban units that correlated with more traditional forms, such as the *machi*—from the *kinrin gūrupu* (neighborhood group) to the *chiku* (district)—to organize dwellings, infrastructure, and civic centers at a scale appropriate to the daily needs of modern life in Japan within an environment ornamented by greenery. It was also committed to greater social objectives, providing space for recreation and leisure in its parks, convenience and hygiene within the home, and consumption in its civic center. A model of modern middle-class living in Japan, Senri New Town brought Western new town planning principles together with Japanese interpretations of the neighborhood unit and the garden city as a way of addressing the housing crisis while pioneering a new model of suburbanization at a time when urban sprawl was rapidly and haphazardly consuming the urban fringe. As the first large-scale new town to be built in Japan, Senri New Town was a template for a new spatial and domestic paradigm.

Chapter 6: Tama New Town

Tama New Town was developed for many of the same reasons as Senri New Town, but because its development was sustained over a period of forty years it refined the principles established at Senri New Town and introduced a new urban structure that was more flexible and adaptable. Studies for a new town located to the west of Tokyo in Tama Hills began in 1962 amidst the same dire conditions that plagued Osaka.¹ Tokyo was overcrowded, and as migrants flooded the city and industrial growth accelerated, so too did the pollution. The city had also been severely damaged by the war, prompting a series of visionary plans by prominent architects (these were never realized) and development plans by the state, including the National Capital Regional Development Plan of 1958 that proposed a series of satellite towns and greenbelt around the city. These plans were largely ineffective, and by the late 1960s suburbanization of Tokyo's urban fringe remained unchecked.² Like Senri New Town, Tama New Town would be a model of rational development in the suburbs that would both preserve green space and cultivate an ideal residential environment for the new middle-class. Konno Hiroshi proposed a linear city for the site that arranged neighborhood units along an urban spine characterized by land readjustment areas, infrastructure, and district centers. They structured the master plan according to a "hard shell, soft cell" framework that fixed the road network as a frame around neighborhood units were left undefined.³ Tama New Town was also rooted in controversy that would shape its evolution and influenced by larger sociological and political forces. Protests overshadowed the beginning of the new projects as residents of

¹ Nihon jūtaku kōdan, *Nihon jūtaku kōdanshi* [History of the Japan Housing Corporation] (Tokyo: Nihon jūtaku kōdan, 1981), 41-44.

² Marco Amati, *Urban Green Belts in the Twenty-first Century*, (Aldershot, England: Ashgate, *eBook Collection (EBSCOhost)*, EBSCOhost, 2008), accessed April 19, 2015, 25-56.

³ Hiroshi Konno, "Urban Development and Road Building: A Brief History of Tama New Town," *Wheel Extended no.73*, (1990): 11

the existing villages demanded exemption from the new town and concern about the natural environment forced early drafts to be developed quietly. Ōtaka Masato's office drew up a plan for the neighborhood units according to the topographical conditions of the site, although it was never realized and the resulting landscape of the first two districts retained the modernist, homogenous qualities of Senri New Town.⁴ Furthermore, in 1971 Tama New Town's first residents began to move in, just before the housing crisis ended in 1973, the same year that the "oil shocks" and the "Nixon Shocks" rattled the confidence of the nation. Expectations began to outgrow the new town even in its earliest phases as a new generation steeped in consumer culture demanded more space and more variety. The focus of the new town's residential environment had to shift from providing a high quantity of adequate housing to one that provided a high quality of living.⁵ Tama New Town's green network, in its infancy in the first neighborhoods, became an opportunity to enrich the atmosphere of the new town, while dwelling size began to increase and new typologies were explored. The district center also took on new commercial attributes. The economic and social changes of the 1970s reshaped the environment of the Tama New Town as it developed, becoming a testing ground for new ideas in form, domesticity, and public life.

Tama New Town and Tokyo's Urban Fringe

In the same vain as Senri New Town, Vällingby, Tapiola, and other postwar new towns, Tama New Town's original *raison d'être* was to address the housing crisis and suburban sprawl in a rapidly changing city. A state-led residential new town project, its primary objective was to construct quality housing within a healthful environment on a mass scale while responding to the nuclearization of the family, the motorization of the city, and the globalization of the region.⁶ In 1960, the city of Tokyo had a population of roughly 9.7 million people and a population density of 163 people per hectare in built up districts,

⁴ Takeshi Kinoshita and Tetsuo Nemoto. "Tama Nyuu-taun Shizen Chikeian: Keian wo Meguru Shokankei no Dainamikusu [Proposal for Tama New Town Geographical Features: Dynamics of Geographical Relationships]." *10 + 1: Ten Plus One* 42 (2006): 124-127.

⁵ Yasuhiro Naruse and Kenji Takahashi, "Tama New Town," edited by Sadatsugu Nishiura, presented at Steedman Summer Travel Fellowship Meeting on Tama New Town, Tama City, Japan, August 11, 2014, 34.

⁶ UR toshi kikō, *Tama New Town: Since 1965*, UR City Organization, Tama, Tokyo: Toshi saisei kikō, April 2008, 1.

compared to Osaka City, whose population that same year was 5.5 million and population density was 138 people per hectare.⁷ Air raids during the war obliterated 51% of Tokyo, leaving the city short 750,000 dwellings.⁸ Rising land prices in one of the world's largest and most expensive cities, as well as significantly underfunded land reconstruction projects following the war, meant that large JHC public housing estates alone were insufficient to meet the Kantō region's needs.⁹ The National Capital Region Development Plan was announced in 1958, "restructuring the metropolitan region into clearly articulated town areas (including new towns) divided by greenbelts" in a pattern indebted to the 1944 Greater London Plan by Sir Patrick Abercrombie through Ishikawa Hideaki's 1946 plan for rebuilding Tokyo.¹⁰ This plan, Tokyo's second attempt to create a greenbelt, resulted from the 1956 National Capital Sphere Redevelopment Act, which aimed at containing urban sprawl through a series of designated "belts" around the city, as well as planned new towns connected to the core of the city by rail. These efforts largely failed as rural landowners strongly opposed the measure, particularly those in the Tama region, who protested the suburban belt plan at Hibiya Park in 1956. Ironically, the project of Tama New Town itself dealt "the concept [of the regional greenbelt] a final blow," as it was built directly in the designated greenbelt zone, a result of central government policy, rather than regional planning.¹¹ Because the

⁷ Ministry of Internal Affairs and Communications: Statistic Bureau, "2-7 Population, Population Density, Population of Densely Inhabited Districts and Area by Prefecture, All Shi and All Gun (1898--2005)," *Chapter 2 Population and Households*, accessed March, 2015, <http://www.stat.go.jp/english/data/chouki/02.htm>.

⁸ André Sorensen, *The Making of Urban Japan: Cities and Planning from Edo to the Twenty-First Century* (London: Routledge, 2002), 159; "Bombings of Tokyo and Other Cities," *World War II Database*, Lava Development, LLC, 2004-1015, accessed March, 2015, http://ww2db.com/battle_spec.php?battle_id=217.

⁹ Michael Wegener, "Tokyo's land market and its impact on housing and urban life," in *Planning for Cities and Regions in Japan*, ed. Philip Shapira, Ian Masser, and David W. Edgington, (Liverpool: Liverpool University Press, 1994), 95.

¹⁰ Wegener, "Tokyo's land market and its impact on housing and urban life," 95; Carola Hein, "Visionary Plans and Planners: Japanese Traditions and Western Influences," in *Japanese Capitals in Historical Perspective: Place, Power and Memory in Kyoto, Edo and Tokyo*, ed. Nicolas Fiévé, and Paul Waley (London: New York: RoutledgeCurzon, 2003), 322-327. Patrick Abercrombie's Greater Plan for London (1944) followed the County of London Plan he produced in 1943. Ishikawa's plan adopted many of the same ideas for Tokyo that Abercrombie proposed for London. Chiefly, Ishikawa proposed the development of Tokyo as an industrial city surrounded by a series of satellite cities that would house political and economic functions. By using this network, the overall population of Tokyo could be reduced to 3.5 million people maximum. He also included a network for parks and public squares, as well as a greenbelt. This plan was not carried out.

¹¹ Amati, *Urban Green Belts in the Twenty-first Century*, 25-27. Hibiya Park, one of the only open public spaces in Tokyo, was an important site for protest throughout the twentieth century. Angered by a lack of compensation, farmers and villagers from the Tama region staged demonstrations that successfully prevented the development of any suburban greenbelt and enabled farmers to develop some of their land.

municipal government had little control over the planning of the suburban greenbelt and ad hoc building persisted at a rapid pace, by 1965 “more than half of the area of 110,000 hectares initially earmarked for green belts had already been lost to housing.”¹² Other plans were also proposed for Tokyo, including Ōtaka Masato’s 1958 Plan for Tokyo Bay, the Neo-Tokyo Plan of 1959 and Tange Kenzō’s Tokyo Bay Plan of 1960, which looked to the bay for a solution to urban expansion rather than the urban fringe, but were never realized (for more detail see Chapter 3).¹³ In reality, as Carola Hein points out, visionary planning had very little impact on Japan’s urban landscape and Tokyo continued to develop in a chaotic manner.¹⁴ This made projects like Tama New Town an important opportunity to test more visionary planning techniques on a large scale.

The Tokyo Metropolitan Government (TMG), who sponsored Tama New Town, began searching for large new town sites near the periphery of the city in the early 1960s as land prices in Tokyo rose and a need for additional housing grew. Tama New Town must be understood within its regional context, as it is both removed from and encompassed by the city. A publication written by the Housing and Urban Development Corporation (HUDC, formerly known as the JHC) in 1996 called *Tama nyūtaun jigyō gaiyō* [Tama New Town Project Outline], divided *Tokyo-to* into four zones: the 23 Special Wards, the Musashino Zone, and Tama Chūō (Tama Center) Zone, and a *rinkan* (forest) zone. Within this framework, the HUDC situates Tama New Town as the “heart” of the Tama Chūō Zone, where it would be conveniently accessible, yet still removed from the city.¹⁵ Several sites were examined before the final

¹² Tatsuya Tsubaki, “Anglo-Japanese Exchanges in Town Planning—The case of Tama New Town in the 1960s and William A. Robson—” *Discussion Paper Series*, (Nagoya: Institute of Economics, Chukyo University, November 2002), 4.

¹³ Eizō Inagaki, *Nihon no kindai kenchiku* [Modern Architecture of Japan] (Tokyo: Chuokōrin bijutsu shuppan, 2009), 322; Seng Kuan, “Land as an Architectural Idea in Modern Japan,” in *Architecturalized Asia: Mapping a Continent through History*, ed. Vimalin, H. Rujivacharakul, Hazel Hahn, Ken Tadashi Ōshima, and Peter Christensen (Honolulu: University of Hawaii Press, 2013), 191-196.

¹⁴ Hein, “Visionary Plans and Planners,” 309.

¹⁵ Jūtaku toshi seibi kōdan minami tama kaihatsukyoku. *Tama nyūtaun jigyō gaiyō* [Tama New Town Project Summary] (Jūtaku toshi seibi kōdan minami tama kaihatsukyoku, 1996), 25; “Tokyo|Administrative Subdivision, Japan,” *Encyclopedia Britannica*, accessed April 27, 2015. <http://www.britannica.com/EBchecked/topic/598409/Tokyo>; “Tokyo-Yokohama Metropolitan Area | Japan,” *Encyclopedia Britannica*, accessed April 27, 2015. <http://www.britannica.com/EBchecked/topic/598501/Tokyo-Yokohama-Metropolitan-Area>. “Tokyo” itself can be a rather convoluted term, as it is often used interchangeably in English to refer to both *Tokyo-shi* (Tokyo City, which consists of 23 Special Wards), and the *Tokyo-to* (Tokyo Metropolis, which consists of

site in the Tama Region was chosen, including Yokohama, Kawagoe, and Tokorozawa. Studies on the Tama Region began in 1962. The project, which began development in 1965 in Minami-Tama (South Tama), resulted from the Ministry of Construction's 1963 New Residential Town Development Act (New Towns Act). Its provisions endeavored to address the housing crisis, calling for the development of good quality housing environments and the utilization of unused land. It also allowed the government to acquire land in all planned areas through a new system of land readjustment.¹⁶ The New Towns Act further stipulated that new towns be developed as commuter cities, rather than secondary independent satellite cities, which was enforced by restricting the amount of land that could be used for commercial or industrial functions.¹⁷ These measures eased the way for new town projects across Japan, of which Tama New Town would be the largest.

Tama New Town was the largest new town constructed in Japan under the New Towns Act. Double the scale and scope of Senri New Town, Tama New Town's final plan, issued in 1965, covered 3,061 hectares and set targets for a population of 286,000 people (342,000 projected) at a population density of 94 people per hectare.¹⁸ By the time of the project's completion in 2005, the JHC, the TMG, and the Tokyo Metropolitan Housing Supply Company (TMHS), along with a few private builders, constructed 58,239 dwellings (64,430 planned).¹⁹ It was also a considerable departure from the scale of European postwar new towns, accommodating a population 4.5 times the average size of London's new towns (Basildon, Hemel Hempstead, and Welwyn Garden for example), five times that of Vällingby in Sweden, and ten times that of Tapiola in Finland. In the context of postwar Tokyo, which surpassed 10 million

Tokyo City as well as industrial and residential suburbs, and rural areas located to its west). *Tokyo-to* the administrative unit of Tokyo today, was formed in 1943 and includes the site for Tama New Town. With far less specificity, "Tokyo" sometimes also refers to the Tokyo-Yokohama Metropolitan Area, which includes the surrounding prefectures of Saitama, Chiba and Kanagawa.

¹⁶ Nihon jūtaku kōdan, *Nihon jūtaku kōdanshi*, 41-44; Naruse and Takahashi, "Tama New Town," 4.

¹⁷ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 13; Hiroyoshi, Kano, "Tama New Town: The Growth of a New Residential Area in a Suburb of Tokyo," in *Growing Metropolitan Suburbia: A Comparative Sociological Study on Tokyo and Jakarta*, ed. Hiroyoshi Kano, (Jakarta: Yayasan Obor Indonesia, 2004), 140. This was changed through a revision in 1986 that allowed Tama New Town to plan for more commercial and industrial development. Before this revision, new towns were only able to include facilities directly related to the required services for its residents.

¹⁸ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 19; Naruse and Takahashi, 17.

¹⁹ UR toshi kikō, *Tama New Town: Since 1965*, 1; Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, front fold.

people by 1965 and had a population density of 156 people per hectare, Tama New Town's ambitious scale made a good deal of sense, but it needed to rely on high-density new town models, like those in Scandinavia, rather than on the low density British new town.²⁰

The TMG chose a topographically rich site for Tama New Town located a convenient distance away from the capital city, just as the Osaka Prefectural Public Enterprise Bureau (OEB) had done for Senri New Town. Initially, a 1,600-hectare area centered in Minami-Tama kyūryō (South Tama Hills) was chosen for development. The boundary of the site was expanded to encompass 3,000-hectares in 1964 and shifted slightly to the north of the original project to become a part of a designated 7,000-hectare “new culture city.”²¹ The site had a number of features desirable for new towns at the time. The region, known as Tama kyūryō (Tama Hills) Region located 30-40 kilometers to the west of Tokyo City in the Kantō Plain, offered a beautiful natural terrain that was hilly and well vegetated.²² The Tama River, separating the site from the Musashino Daichi (Musashino Plateau) to the north, branched off into the Ōguri, Kotta, Ōta, and Misawa Rivers, along which a series of villages could be found. The area, topped with Kantō loam soil, had both lowlands in the valleys around the rivers, as well as hill formations that varied between 30 and 180 meters.²³ At the foothills of the Kantō Mountain Range located to its west, the South Tama Hills Region was still gentle topographically, and like the site for Senri New Town, offered planners a beautiful landscape with which to work. Tama Hills was chosen as a site precisely because of its environmental qualities, which are still visible in satellite images of the greenery that both surrounds and permeates the town.

²⁰ Ministry of Internal Affairs and Communications: Statistic Bureau, “2-5 Population by Prefecture and Sex (1884--2009),” *Chapter 2 Population and Households*, Statistics Bureau (1996), Accessed April, 2015, <http://www.stat.go.jp/data/chouki/zuhyou/02-05.xls>; Ministry of Internal Affairs and Communications: Statistic Bureau. “2-7 Population, Population Density, Population of Densely Inhabited Districts and Area by Prefecture, All Shi and All Gun (1898--2005),” *Chapter 2 Population and Households*, Statistics Bureau (1996), Accessed April, 2015. <http://www.stat.go.jp/data/chouki/zuhyou/02-07.xls>.

²¹ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 15.

²² Nihon jūtaku kōdan, *Nihon jūtaku kōdanshi*, 43.

²³ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 23.

The Tama New Town project also had a dramatic impact on existing settlements in the Tama Hills Region, which were restructured through land readjustment. Land acquisition by the TMG and the JHC began in 1963 with the JHC's purchase of the Seiseki Sakuragaoka area (present-day Nagayama), and by 1965 the entire 3,000-hectare site for Tama New Town was legally authorized under the New Towns Act.²⁴ But, the small farm villages that were reorganized for the project had existed in the area for centuries.²⁵ Land readjustment became a critical tool for the development of the postwar new town, as the selected site engulfed Tama, Inagi, and Yūgi villages, as well as smaller settlements like Sekido, Renkoji, and Ichinomiya and strong land ownership rights in Japan at the time made land acquisition otherwise difficult.²⁶ It was used widely during the postwar period throughout Japan to redevelop rural areas into suburban ones, often requiring a portion of land relinquished by landowners to be set aside for public amenities and it enabled agencies like the JHC, as well as local government agencies subsidized by the central government, to more easily acquire land to develop housing estates or other large-scale development projects.²⁷ This helped to ensure that the new town projects and other large-scale projects would meet the needs of new residents, unlike many of the haphazard suburban settlements that sprang up around the city without the adequate provision of important infrastructure. The New Towns Act, along with the 1954 Land Readjustment Law, made development of the Tama Hills site feasible and by 1966, construction began. Ultimately, the land readjustment program carried out during the new town project left a significant impression on the urban landscape of the region. Like Senri New Town, the quality of

²⁴ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 3; Naruse and Takahashi, "Tama New Town," 10; Nihon jūtaku kōdan, *Nihon jūtaku kōdanshi*, 44.

²⁵ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 3; Amati, *Urban Green Belts in the Twenty-first Century*, Tama Village, Inagi Village, and Yugi Village (renamed Hachioji in 1964) in South Tama County. These were the same villages, together with others in the Tama region, that staged protests against the greenbelt proposed by the 1958 NCRDP.

²⁶ Kano, *Growing Metropolitan Suburbia*, 133-138. Villages had existed in the Tama area since at least the 13th century, such as Sekido, (Yoshitomi) Renkoji, and Ichinomiya, and there were several archeological sites found on the land when it was excavated. Furthermore, such villages, such as Tama, Inagi, and Yugi, which formed following the Meiji Restoration, continued to thrive in the region, posing challenges to the metropolitan authority. Sekido, Renkoji, Kaitori, Kotta, and Ochiai were particular areas of focus for land readjustment.

²⁷ Jeffrey M. Diefendorf, "War and Reconstruction in Germany and Japan," *Rebuilding Urban Japan after 1945*, ed. Carola Hein, Jeffrey M. Diefendorf, and Yorifusa Ishida (Houndmills, Basingstoke, Hampshire: Palgrave Macmillan, 2003), 220; Yorifusa Ishida, "The Practice of Machizukuri 'Community Making'" in *Living Cities in Japan: Citizens' Movements, Machizukuri and Local Environments*, ed. André Sorensen and Carolin Funk (London: Routledge, 2007), 121; Sorensen, *The Making of Urban Japan*, 183-187.

the environment, not the political boundaries, defined Tama New Town as a community, but unlike the more utopian plans of Senri New Town and many European postwar new towns, the land readjustment program dramatically transformed the fabric of the new town by integrating the more ad hoc urban qualities of Tokyo City into the new town through a central urban spine that ran along the railways and rivers.²⁸ It organized the relationship between the four municipalities and deconstructed the homogeneity that continues to plague projects like Senri New Town, stitching together the megalopolis and the new town in a new way.

Land acquisition for Tama New Town sparked protests in the existing settlements that resulted in their exclusion from the new town plan; instead the TMG would reorganize them along the valleys using land readjustment, ultimately forming an urban spine that visually and socially defined the new town. In 1965, protests held by local villages against the project resulted in an agreement that allowed the villages to be excluded from the master plan of the new towns itself. Instead, only ridge areas would be developed according to the master plan, while the villages would be reorganized using land readjustment along the valleys and rivers where many already existed.²⁹ The existing villages did not lose complete autonomy through this process because Tama New Town was not developed as political entity in its own right, instead intersecting four separate municipalities: Hachioji City, Machida City, Tama City, and Inagi City.³⁰ A change in administrative boundaries between Tama and Machida cities took place in 1973 as a result of the project, but the cities nevertheless all remained distinct administrative units, even while the

²⁸ David Pass, *Vällingby and Farsta--From Idea to Reality; The New Community Development Process in Stockholm* (Cambridge, Mass: MIT Press, 1973), 2. Senri New Town, in contrast, opted to exclude villages from the new town project altogether, instead developing around them. In the case of Sweden, suburban land for satellite cities around Stockholm was pre-emptively purchased.

²⁹ Naruse and Takahashi, "Tama New Town," 11; Atsushi Kaneko, ed., *Tama nyūtaun kaihatsu no kiseki: "kyodai no jitsugen toshi" no tanjō to henyō* [The Locus of Tama New Town Development: the Birth and Changes of an "Enormous Experimental City"] (Tama, Tokyo: Parutenon Tama Kōekizaidan hōjin tamashi bunka shinkō saidan, 1998), 22-23. Naruse and Takahashi refer to Ōtaka's 1965 Nature and Topography Plan. Although the ridgetops were flattened since Ōtaka's proposal was abandoned, the land readjustment area was distributed along the rivers and valleys where the settlements had originally existed, while the new town was developed on the ridgetops.

³⁰ Established as a municipality in 1971, Tama City sits at the heart of the new town. Before incorporation as a city, Tama was first a village and later a town.

existing villages on the site were reconfigured through land readjustment.³¹ These municipalities were quite important both to the progressive development of Tama New Town as well as to the civic awareness of residents today, as Tama New Town developed from East to West incrementally over several decades. The program, carried out largely by the Tokyo Metropolitan Government, as well as by Inagi City, the Land Readjustment (LR) Association, and the JHC, was extensive, covering 644.1 hectares, or 22% of the land area and relocating 50,500 people (60,200 planned). It also enabled the city to build infrastructure into the new town, including sewerage and water systems, garbage, roadways, and electricity. The first part of the land readjustment program, the Tama Sector, began in 1968 along Tama New Town Avenue and the Kotta River. Five fingers branched to the south along smaller trunk roads, while the Keio-Sagamihara and Odakyū lines ran along the south edge of the spine. This region, formerly shops and farmhouses, was designated as an important zone of civic infrastructure and housing, and had the qualities of a typical Japanese city rather than a new town. Covering 222 hectares, and spanning over four kilometers, the Tama Sector housed 26,000 residents by the time of its completion in 1989. It was dense and the blocks were tiny, subdivided by small roads of only four to six meters. Other land readjustment zones were similar. The Yūgi Sector, developed between 1973 and 1996, was the second largest zone, covering 202 hectares and housing 23,000 people. Like the Tama Sector, it hugged the main trunk lines and rivers, particularly Tama New Town Avenue, Yūgi Street and the Ōguri River, forming a spine that branched off along secondary roads between the large superblocks of the new town. Along with a handful of smaller land readjustment zones scattered throughout the new town, mainly along trunk roads, the Yūgi Sector also took on a conventional urban form, with small dense blocks of mixed-use buildings.³² Because the land readjustment zones were organized along the main trunk lines, rail lines, and rivers, they demarcated the boundaries of the districts and sub-districts in Tama, acting as the tendons that connected neighborhoods to the urban spine.

³¹ Naruse and Takahashi, "Tama New Town," 26-30.

³² Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 23, 72-77; UR toshi kikō, *Tama New Town: Since 1965*, 3.

The railways, built in conjunction with the land readjustment project reinforced this urban spine and established connections between Tokyo and Tama New Town, which were an important link back to the city for commuters. For Tama New Town, rail lines act as an umbilical cord back to the central city, upon which it depended for jobs, entertainment, and culture. Commuting was expected precisely because Tama New Town, like Senri New Town, was not conceived as an independent satellite city for the first fifteen years of its development. In 1974, the Odakyū rail line was opened at the first station in Nagayama, connecting the new town to Shinjuku Station through Shinyurigaoka. The same year, the Keio-Sagamihara line was extended from Yomiuri Land to Keio-Tamagawa and the Odakyū line was extended to Tama Center Station the following year.³³ These rail lines connections proved to be critical for Tama New Town's survival, as despite the hour-long commute to Shinjuku Station, commuting was still common, with over 250,000 passengers per day carried on the two main rail lines that ran through the new town.³⁴ They reinforced the presences of the urban spine. Tama New Town's relationship with Tokyo began to shift in the 1980s, as problems with new towns began to surface and skepticism about the commuter city scheme grew.³⁵ In *Growing Metropolitan Suburbia: A Comparative Sociological Study on Tokyo and Jakarta*, economist Kano Hiroyoshi, who specializes in Southeast Asian economics, nicely summarizes this change:

The original intent of the project was the construction of a new residential area as a satellite town of the metropolis, which is in harmony with the natural environment. Thus, it rejected the provision of land and facilities for business and industrial activities not directly related to service for its residents. However, this attitude changed in the 1980's with the acceptance of the idea of the creation of an independent city able to provide wider employment opportunities... Since then, the motto of the Tama New Town Project

³³ Neither line was extended again until the 1988, when the Keio-Sagamihara line opened at Minami-Ōsawa. In 1990, the Keio-Sagamihara line reached its current terminus, Hashimoto, the same year that the Odakyū line was extended to Karakida.

³⁴ Ibid., 77-78. Data shows the number of passengers who embark and disembark at Odakyu Line and Keio Sagamihara Line rail stations in Tama new town each day in 1995.

³⁵ For more on problems with residential new towns see Hiroshi Tanabe, "Problems of the New Towns in Japan," *GeoJournal: An International Journal on Human Geography and Environmental Sciences* 2, no.1, (1978): 39-46, accessed January 27, 2015, <http://www.jstor.org/stable/41142068>; Shinzo Kiuchi, and Noboru Inōchi, "New Towns in Japan," *Geoforum* 7, (01, 1976): 1-12.

has been changed to the creation of an ‘integrated multi-functional city’ which should develop into an independent entity.³⁶

This shift in the 1980s underlines Tama New Town’s unique role as an experimental new town, distinguishing it from the more rigid master plan of Senri New Town. Tama New Town, even at its beginning, needed to adapt its identity to respond more directly to local and regional needs through incremental master planning and construction. The urban spine, which was the backbone of its framework, enabled the project to respond to changes over forty years of construction. Yet, despite the changes that would take place within its fabric, its connection to Tokyo as the capital city, particularly to Shinjuku Station, remained strong, highlighting their continued codependence.

“Hard Shell, Soft Cells:” The Planning of a Linear City

Because it was developed over a forty-year time frame, Tama New Town was not developed in a unified, hierarchical way as Senri New Town had been; instead, it was a linear city defined by variegated districts constructed in tangent to the development of its infrastructure and land readjustment program.³⁷ Based on draft plans carried out by the *Tōkyō-to shuto seibi kyōku* (Tokyo Metropolitan Facilities Bureau) from 1961 to 1963, Tama New Town was built as a linear city, with rail lines and a series of district centers running through the center of the new town along the mountain ridges.³⁸ This essentially broke the new town down into three distinctive urban components—the urban spine, neighborhood districts, and district centers, and granted more spatial flexibility and fluidity to Tama New Town while also firmly anchoring it into its surrounding landscape. A team of six planners from the *Yōchi-bu to Kōji-bu* (Planning and Construction Divisions) and four from the *Kenchiku-bu* (Architecture Division) introduced these ideas in the first draft for Tama New Town under the guidance of Tokyo University graduate Konno Hiroshi upon the request of the *Tōkyō-to shuto seibi kyōku chō* (Director of the Tokyo Metropolitan Facilities Bureau),

³⁶ Kano, *Growing Metropolitan Suburbia*, 139.

³⁷ Naruse and Takahashi, “Tama New Town,” 15.

³⁸ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 15.

Yamada Masao.³⁹ The drafts produced by Konno's team at the JHC between 1963 and 1965 had four major objectives: to not disrupt the Tsurumi River Basin; to create a balance of residential and arable land; to set a population of 100 people per hectare within a landscape that left as much green space as possible; and to have an Area Foundation Institution that would manage and coordinate the new town.⁴⁰ To do this, they took responsibility not only for the master plan drafts, but also for designing the changes in the designated developmental area, the railway routes and road revisions, the placement of district centers, and the 1965 plan for the region surrounding the new town.⁴¹ Tama New Town would not only provide housing; it would also provide an economic, cultural, and social center for the region within a healthy, modern landscape.⁴²

Because Tama New Town was such an ambitious project, its framework was critical to structuring its development, both through the planning phase and throughout construction. This rigid frame consisted of the road network and the urban spine formed by the rail lines and land readjustment areas. In addition to connecting Tama New Town to Tokyo, the rail lines also contributed to the framework for the new town, organizing the urban spine that integrated its various districts. Konno Hiroshi refers to this as a “hard shell, soft cell” in his 1990 article “Urban Development and Road Rebuilding: A Brief History of Tama New Town” featured in *Wheel Extended*, such that the “scheme... defines the skeletal transport infrastructure—the principal roads and railroads—as the Town's ‘hard shell,’” while “land usage within the residential areas encompassed by this hard shell, on the other hand, is defined in terms of ‘soft cells.’”⁴³ The “soft cells” refer to the 21 neighborhood units that made up Tama New Town and were

³⁹ Nihon jūtaku kōdan. *Nihon jūtaku kōdanshi*, 41; Konno, “Urban Development and Road Building,” 9-17; Kei Minohara, Hiroshi Matsukawa, and Naoto Nakajima, *Kenchika ōtaka masato no shigoto* [The Work of Architect Masato Otaka] (Tokyo: Ekusunarejji, 2014), 58. Konno Hiroshi graduated from Tokyo University Department of Civil Engineering in 1945 and was a classmate of Ōtaka Masato and student of Ishikawa Hideaki. He went on to work for the Ministry of Construction, the JHC, and later, the Urban Development Engineering Co, Ltd. At the JHC he led a team of architects in the initial planning phase of Tama New Town.

⁴⁰ Nihon jūtaku kōdan. *Nihon jūtaku kōdanshi*, 41.

⁴¹ Minohara, Matsukawa, and Nakajima, *Kenchika ōtaka masato no shigoto*, 58.

⁴² Nihon jūtaku kōdan. *Nihon jūtaku kōdanshi*, 44.

⁴³ Konno, “Urban Development and Road Building,” 11.

delineated by a combination of primary trunk lines and district distributors. The team first introduced the urban spine in its first draft (October 1963), which was rotated roughly 15° south of all subsequent plans and clearly established the “hard shell” framework for Tama New Town. The team grouped the railways, trunk lines, and land readjustment areas together in a linear urban spine punctuated by a series of seven district centers that corresponded with rail stations. It also established a road system that completely erased any existing roads and replaced them with four east-west trunk roads parallel to the railway and a series of smaller perpendicular roads spaced 500 meters apart. This reinforced the urban spine and defined the boundaries of the neighborhood units. The first draft, which was 2,249 hectares, also included four large golf courses and one large park.⁴⁴ This “hard shell” skeleton would be refined over time, but its concept was established from the first draft onward.

The “skeletal transport infrastructure,” or “hard shell” of Tama New Town was an important means of organizing a project that would develop slowly over time. While the idea was established in the first draft, it needed refinement. Konno’s team expanded the second plan (December 1963) to 2,999 hectares, and rotated it to the present-day location of Tama New Town in order to address some of the environmental problems that resulted from the first plan, as well as to stitch together the various villages that existed in the region. Konno’s team moved the urban spine into the valleys rather than along the mountain ridges, allowing the new town to span over tributaries of the Tama River system and reorganize Yūgi Village, which was susceptible to urban sprawl. This shift also eliminated the need to reconfigure the Tsuru River system located just to the south, in the area of the first plan. In addition to the topographical shifts, the roadways, stations, and district centers were further clarified. The outline of the plan area was refined with each draft and the local roads were reshaped to accommodate larger neighborhood units, which gradually become less rigid with each iteration. The final boundary of the site approximated in the third draft (March 1964) and finalized in the fourth draft (November 1964), covered

⁴⁴ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 15.

3,173 hectares. The road system was simplified with the release of the Tama New Town Transportation Plan in 1964, creating larger and slightly more organic neighborhood units organized around one middle school each.⁴⁵ In the final plan, and in reality, the primary trunk lines formed the main traffic routes and connected the new town to its surrounding region by plugging into Tokyo's loop highway systems and connecting directly back to the primary city along the east-west axis meanwhile delineated the neighborhood units, while smaller local distributors and access roads permeate the neighborhood units to bring residents closer to the small neighborhood shopping centers and neighborhood blocks.⁴⁶ This road hierarchy reflects a refinement of the more complex, 6-tiered system found at Senri New Town, and paralleled Howard's boulevard-avenue-road hierarchy more closely than Le Corbusier's V7 transportation system.⁴⁷ It was a system intended to be flexible and responsive to the changing needs of the new town through time.

The "soft cells" meanwhile also enabled the designers of Tama New Town to equip it with a second layer of infrastructure designed exclusively for pedestrians. This pedestrian network wove through the neighborhood units and connected different elements of the new town together. It also had significant implications for the road network itself. Pedestrian ways in Senri New Town often ran parallel to the major boulevards and avenues, but because they were extracted from the road system in Tama New Town—included instead within the "soft cells"—they primarily served "intra-unit traffic," as in Radburn.⁴⁸ This allowed them to grow more complex and could engage directly with the schools, parks, and superblocks within the neighborhood units. The result was a beautiful network of well-landscaped pedestrian ways woven throughout the interiors of the neighborhood units. The span of the pedestrian network did bring up a couple of problems. Many of these pedestrian pathways proved to be too long for comfortably walking or running daily errands. At the same time, concerns about safety from the vehicle

⁴⁵ Ibid., 15-18.

⁴⁶ Konno, "Urban Development and Road Building," 11.

⁴⁷ Ebenezer Howard, *Garden Cities of Tomorrow* (London: Swan Sonnenschein & Co., Ltd., 1902), 22-24.

⁴⁸ Konno, "Urban Development and Road Building," 11.

were replaced by concerns about public safety, particularly crime at night, as the verdant pedestrian pathways were frequently unpopulated and ornamented with thick foliage. Fortunately, thanks to Tama New Town's experimental attitude, planners responded to these concerns by the 1980s, introducing new street types such as the "woonerf" streets characterized by low traffic speeds and shared space, in order to make travel safer and friendlier for the residents.⁴⁹

Perhaps because the "skeletal transport infrastructure" was oversimplified and over-scaled, it created significant challenges for the residents of Tama New Town. In his 1990 article, Konno points out a number of problems that arose as a result of this road network. Private car usage increased dramatically in Japan in the early 1970s, particularly among housewives and young people. Because the primary trunk roads and district distributors segregated the neighborhood units, the "inter-unit road network has become a notable inconvenience," as residents would first need to move onto the primary road system before entering another neighborhood.⁵⁰ This made daily errands increasingly difficult, as access to local amenities was rarely designed to accommodate vehicles. Furthermore, because the segregation of traffic made arrival and parking difficult, it also affected the operations of businesses located outside of the district centers. This was further complicated by the unanticipated and "frequent use of bicycles and minibikes" that made roads and pedestrian ways more dangerous.⁵¹ Konno and his team had anticipated the use of the automobile by designating high-speed roads and separating traffic, but they had failed to foresee the ways in which vehicles would be used by families on a daily basis.

District centers added another layer to the "hard shell, soft cell" scheme, reinforcing the urban spine and organizing the neighborhood units around community and commercial functions. The district centers

⁴⁹ Konno, "Urban Development and Road Building," 15; Eran Ben-Joseph, "Changing the Residential Street Scene: Adapting the Shared Street (Woonerf) Concept to the Suburban Environment" *APA Journal* (1995): 504-515. Woonerf streets, or shared streets, are the antithesis of the practice of separating different modes of traffic, most notably the pedestrian. It restores the human scale to local streets and is more adaptable to change. They are also considered to be safer, as they subordinate (and thereby slow) the vehicle in favor of the pedestrian.

⁵⁰ Konno, "Urban Development and Road Building," 11.

⁵¹ *Ibid.*, 15.

were the destinations of both the pedestrian network and the transport infrastructure, and were the *genkan* (entryway) to the new town.⁵² The first draft called for seven evenly spaced district centers corresponding with a rail station, but this was pared down to three larger district centers in the second draft in order to improve efficiency. The third draft added a small district center was added, and doubled the size of the two central district centers (totaling four). An important shift in thinking occurred with the fourth draft: the cultural, educational, and consumer activities were consolidated into a single district center located at the heart of the new town. *Tama nyūtaun jigyō gaiyō* [Tama New Town: Project Outline] elaborates considerably on the implications of the fourth plan, indicating the importance of its thinking on the outcome of the project. Konno's team recognized that there could be difficulties preserving land designated for the district centers and thought that concentrating the center at the heart of the new town would create a stronger sense of identity within the region. They also realized that with the growing reliance on cars and buses, rather than railways for transportation, there might be less need for a district center at each station. This centralized location would be more convenient for all modes of transportation, as well as for people from other parts of the region. Further, the concentration of the district center would make implementation easier and more efficient. The fifth plan corrected some of the problems that arose with the fourth, such as the lack of flexibility and inconvenience inherent in such concentration of services, but continued the "one center" program, adjusting the center to the south of the railway to leave room for future expansion. Because the railways had been aligned with the location of the existing villages targeted for land readjustment since the second plan, much of the high-density housing had to be positioned at a distance from the rail stations, which was somewhat counter-intuitive. The planners did not see this as an issue as they recognized a growing reliance on personal vehicles and buses, reducing the number of rail stations to only four.⁵³

⁵² Minohara, Matsukawa, and Nakajima, *Kenchika ōtaka masato no shigoto*, 171.

⁵³ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 15-18.

The district centers at Tama New Town operated as a powerful community focal point, offering not only space for public life, but also acting as the front door to the new town. The 1965 master plan situated the 3,061-hectare Tama New Town within the greater *Tama shintoshu kuiki* (New Tama Urban Area), which totaled 7,604 hectares with a population of 450,000, emphasizing its regional role as a cultural and commercial center. It moderated between the first three plans and plans four and five by creating a hierarchy of district centers and increasing the number of rail stations to five. Keeping the large central district center, Konno's team added three sub-centers to the master plan, neighborhood shopping centers, and a number of large parks distributed across the new town, allowing for a greater population density around the district centers. The master plan also set aside space for "universities, research centers, and recreation facilities that have difficulty finding locations within Tokyo City," positioning Tama New Town as a regional center.⁵⁴ In principal, each of the district centers would support four to five neighborhood units of roughly 12-20,000 people each, although the Tama Center, the largest one, would also serve the surrounding region.⁵⁵

The district centers reinforced Tama New Town's role within the greater Tama region through the provision of important civic and commercial amenities. For example, each district center had "commercial, entertainment, office, [and] service" buildings, as well as hospitals, banks, and large-scale shopping.⁵⁶ Considerable space was also made for amusement, such as Sanrio Puro-rando and a Warner Mycal Cinema, big box retail like Ito-Yokado Shopping Center, which is found at rail stations across the nation. Meanwhile, large architectural plazas offered space to residents for festivals, street performances,

⁵⁴ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 19; Naruse and Takahashi, "Tama New Town," 9; The New Tama Urban Area consisted of Hachioji, Hino, Tama New Town, Machida and Sagami-hara.

⁵⁵ Naruse and Takahashi, "Tama New Town," 16.

⁵⁶ UR toshi kikō, *Tama New Town: Since 1965*, 5, 13.

and the annual “Christmas Illumination.”⁵⁷ In its own history, *Nihon jūtaku kōdanshi* [A History of the Japan Housing Corporation], the JHC articulates the significance of Tama’s district centers, writing,

While Tama New Town was a city whose main function was residential, with two new rail lines developed to tie the new town to Tokyo city for things such as employment and shopping, on the other hand, because it was placed at the center of the vast entire South Tama Region economically, culturally, and socially, a large town center was programmed at the heart of the new town. In order to have the appropriately complex urban functions as the nucleus of the region, the new town was planned with various commercial, business, administrative, and cultural institutions, it was made rich with new town glamour, and even more independent role was expected.⁵⁸

In Tama New Town the district centers surrounding the rail stations supported a greater spatial and social breadth than those at Senri New Town, which focused primarily on serving the daily needs of its residents. *Tama nyūtaun jigyō gaiyō* [Tama New Town: Project Outline] further emphasized the relationship between the district centers and the greater Tama region through two diagrams that situated the district centers within a network of other centers in neighboring areas.⁵⁹ Tama New Town’s district centers had greater regional responsibility, and therefore, came to offer more diversity and opportunity than those in Senri New Town. Furthermore, in most cases the district centers continued to emphasize the experience of the pedestrian through the provision of generous pedestrianized plazas and pathways, reinforcing the civic center principles of CIAM (although they gave way to more consumerist objectives over time). While this pattern certainly carries forward the pedestrianized civic centers found at Senri New Town, the pedestrianization of the district centers at Tama New Town are undoubtedly a product of Ōtaka Masato’s thinking as well. Ōtaka was involved in the planning for both Tama Center and Minami-Ōsawa Center, two projects where he sought to create a human-centered environment through the careful separation of “functional” and “human” spaces, road placement and pedestrian infrastructure.⁶⁰

⁵⁷ Ibid., 15.

⁵⁸ *Nihon jūtaku kōdan*. *Nihon jūtaku kōdanshi*, 44.

⁵⁹ See diagrams from the “South Tama New Town Development Plan 1990” in *Jūtaku toshi seibi kōdan*, *Tama nyūtaun jigyō gaiyō*, 25.

⁶⁰ Minohara, Matsukawa, and Nakajima, *Kenchika ōtaka masato no shigoto*, 59, 171.

The Greenade Nagayama shopping center marked the opening of Tama New Town's first district center in 1973: Nagayama Center, which served Tama New Town's earliest neighborhood units of Suwa and Nagayama.⁶¹ The Odakyū rail line, extended the same year from Shinyurigaoka, handled roughly 70,000 passengers per day at Nagayama by 2004, making it the third largest district center in Tama New Town.⁶² The Greenade Nagayama, which housed retail space, restaurants, clinics, and offices in two buildings totaling 30,410 square meters, and intersected with the Keio-Sagamihara and Odakyū rail stations. The buildings, along with a parking garage to their north, were arranged linearly along the eastern edge of Nagayama center to articulate the public plaza space directly to its west. Leisure, amusement, and shopping facilities dominated Nagayama Center and exemplified the idealized new town lifestyle embodied throughout the entire project. Meanwhile, Toyo Ito's Humax Pavilion Nagayama, completed in 1992 just north of the Greenade buildings, crowned the district center with amusement and leisure facilities. Like the Greenade, it faced inward towards the plaza, which was framed to the west by a multi-story apartment complex. A steel-framed structure rising from a reinforced concrete base (basement levels and first floor) elevated a marquee-shaped volume while creating transparency in an otherwise massive and complex structure. The building made the public plaza feel both spacious and defined, while housing various activities, such as a game center, *pachinko* (Japanese pinball), a bath house, restaurants, and even a bowling facility inside.⁶³ Meanwhile, the Belbu Nagayama Building, constructed by Sakakura Associates in 1997, defined the southern edge of the plaza, containing a library, small hall, banks, and other municipal facilities, such as a post office.⁶⁴ Nagayama Center, designed for a lifestyle of leisure, consumption, and convenience, simultaneously created space for both the local community and the anonymous consumer. It maintained a certain sense of intimacy not only through its scale, but through an

⁶¹ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 30.

⁶² Jūtaku toshi seibi kōdan, "Tama New Town Project Time Line," in *Tama nyūtaun jigyō gaiyō*, front fold; UR toshi kikō, *Tama New Town: Since 1965*, 15.

⁶³ "Amusement Complex in Nagayama," *Kenchiku Bunka* 46 no.542 (12, 1991): 140-151.

⁶⁴ "Belbu Nagayama," *Home>Works>Office*, Sakakura Associates, Inc., accessed April, 2015.
<http://www.sakakura.co.jp/info/works/office/>.

architectural sensitivity to public space in both Ito's and Sakakura's buildings. Nagayama Center was not the largest district center in Tama New Town, but it was certainly one of the most important, best encapsulating a nuanced vision of the new town dream.

The most prominent district center, Tama Center was the “heart” of the Tama New Town project. Located at the center of the new town along the Kotta River, it was the largest of the district centers and played the most prominent regional role. The neighborhood units that it served belonged primarily to Tama and Hachioji Cities, although Tama Center itself was located entirely in Tama City. As the 76-hectare commercial heart of the *Tama shintoshu kuiki* (Tama New City Region) it could accommodate as many as 600,000 people, handling over 160,000 rail passengers each day, more than any other center in Tama New Town.⁶⁵ The center began with the extension of the Keio-Sagamihara rail line from Yomiuri Land and the Odakyū rail line from Nagayama in 1974 and 1975 respectively. However, nothing else was built until 1980 when the shopping center Oka-no-ue Puraza (Plaza on the Hill), which contained an Ito-Yokado (a shopping center found throughout Japan), specialty shops and a bank, was constructed along with a pedestrian deck and “public institutions like the post office and NTT.”⁶⁶ Ōtaka designed the 300-meter by 40-meter red-brick pedestrian promenade called Parthenon Dōri (Parthenon Way) that culminated in the site of the Parthenon Tama, an imposing postmodern building completed in 1987.⁶⁷ This cultural complex modulated the hill on which it sat, towering over the district center and acting as a monumental threshold to the Tama Center Park that lay just to its south. Meanwhile, secondary brick pathways intersected Parthenon Dōri perpendicularly, forming a pedestrian-only lattice designed by Ōtaka

⁶⁵ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 41; UR toshi kikō, *Tama New Town: Since 1965*, 15. These figures are from 2004.

⁶⁶ Jūtaku toshi seibi kōdan, “Tama New Town Project Time Line,” in *Tama nyūtaun jigyō gaiyō*, front fold, 41; Minohara, Matsukawa, and Nakajima, *Kenchika ōtaka masato no shigoto*, 59, 171. See also “Showa 56-nen (1981) 1gatsu no tama sentā eki shūhen(kōkū sha shashin),” *Parutenon Tama: teiten satsuei purojekuto WEB gyarari*, Parthenon Tama, accessed March, 2015, <http://www.parthenon.or.jp/teitensatuei/gallery/teitengall.cgi?no=171&file=1> for a series of photos of the construction of Tama Center in 198, and “The Environs of Tama Center Station,” *Tokyo Seen From the Sky*, Tokyo Metropolitan Government, accessed March, 2015, <http://www.koho.metro.tokyo.jp/PHOTO/contents/sp1/gallery/020299.html> for a photo of the construction of Tama Center in 1989.

⁶⁷ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 41

that organized the various commercial, public, and entertainment facilities and circumvented the vehicular network depressed below the main deck of the district center. It was monumental tribute to the pedestrian, reinforcing Ōtaka's human-centric vision for the "heart" of Tama New Town.⁶⁸

Various institutions and facilities began to populate Tama Center over the following two decades that reinforced its role as a commercial "heart" for the region, with a majority completed by 1996. These buildings, which were generally massive corporate, commercial, or cultural complexes, occupied the district center in a semi-suburban manner, forming firm boundaries around sterile, corporatized plazas. Some of the most visually expressive institutions included the Sanrio Puro-rando amusement park (1990), Oka-no-ue Patio amusement center adjacent to the Oka-no-ue Plaza (1992), and the Benese Corporation Building (1994), attesting to the vision of Tama Center as a regional destination for work, shopping, and leisure.⁶⁹ Big box retail, such as Mitsukoshi and Ito-Yokado, as well as retail chains like Starbucks and Mujirushi, further reinforced the growing presence of consumerism within the new town, aligning Tama Center more with nationally scaled corporations than local business, which were found more frequently in areas designated for land readjustment. A revision to the New Residential Town Development Act made in 1986 was responsible for this growing presence of consumerism, as it made the inclusion of more business areas in residential new towns possible.⁷⁰ The center embodied the epitome of Japanese postwar suburban, consumer culture through the prominence of the colorful amusement, shopping, and leisure facilities placed at its core, while offices and public institutions were relegated to the periphery of the district center. Even the Parthenon, Tama Center's cultural center, stood aloof from the busy consumerist atmosphere of the pedestrian deck below, set apart not only topographically but also formally by its somber grey, geometrical façade. The nearly 3,000 parking spaces found throughout the district center

⁶⁸ Minohara, Matsukawa, and Nakajima, *Kenchika ōtaka masato no shigoto*, 59, 171.

⁶⁹ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 44.

⁷⁰ UR toshi kikō, *Tama New Town: Since 1965*, 15; Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 13.

further attested to the growing presence of consumerism in the postwar Japanese new town.⁷¹ It was a center that indulged this social shift towards the postwar consumer lifestyle, while still successfully creating space for the community particularly at Parthenon Dōri, which was often used for festivities such as *Obon matsuri* (Festival of the Dead), held annually in August, *Seijin-shiki* (Coming-of-Age Ceremony), and the annual winter Tama Center Illumination.⁷² These changes reflected a dramatic shift in the purpose of the new town from solving the housing crisis to offering a high quality of life, as well as a shift in its role within a regional framework.

Minami-Ōsawa Center embraced Tama New Town's shift towards consumer culture, which enveloped Japan during the high-growth period. While it was not as large or heavily trafficked as Tama Center, accommodating roughly 50,000 rail passengers per day by 2004, it served over 8,000 households in the surrounding neighborhoods of Minami-Ōsawa, Kamiyugi, and Yarimizu as well as additional day populations visiting the shopping centers or commuting to Tokyo Metropolitan University to its north. The 39-hectare center, begun in 1983, was even more horizontal than Tama Center, which could attribute its semi-urban atmosphere to the large retail and commercial buildings that framed the pedestrian deck.⁷³ An overly wide pedestrian axis, also designed by Ōtaka, extended from Tokyo Metropolitan University to the north towards a circular plaza in Minami-Ōsawa Nakago Park in the south, creating an illusion that the various buildings were set back in a suburban fashion. It too segregated the vehicle from the pedestrian, but it abandoned the sectional qualities of the much grander pedestrian deck at Tama Center.⁷⁴ An octagonal bus terminal and neighboring parking lot to the south of the rail station intensified the condition of excessive open space, and ultimately the pedestrian axis has none of the nuance of the subtler axis at Nagayama Center, or the monumentality of the pedestrian deck at Tama Center. Rather, it was defined by the rail station to the east and a series of uninspiring shopping malls and office buildings along

⁷¹ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyo gaiyō*, 119.

⁷² UR toshi kikō, *Tama New Town: Since 1965*, 15-16.

⁷³ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyo gaiyō*, 67.

⁷⁴ Minohara, Matsukawa, and Nakajima, *Kenchika ōtaka masato no shigoto*, 59, 171.

its western edge. The most notable feature of the Minami-Ōsawa Center was actually the metal “shelter” structure made of steel columns and semi-circular arches by Ōtaka. Forming a long axis along the pedestrian axis itself, it moderated its breadth, connecting the various entrances of the building along the plaza and articulating the octagonal bus stop. It also directed visitors towards the “themed” Mitsui Outlet Park (formerly Le Fete Tama) to the north of the rail station, constructed in 2000.⁷⁵ Purely a destination, Mitsui Outlet Park did little to contribute to the meaning of Minami-Ōsawa as a district center. It demonstrated the degree to which consumer culture had superseded the ideals of the civic center in the Japanese new town. No longer a place for gathering, the “heart of the city” had become a place for consumption.

Although Tama New Town made efforts to provide space for industry and commerce within the new town, particularly following the revision of the New Residential Town Development Act in 1986, its primary purpose as a residential new town remained and the *jūku* (neighborhood unit) was as central to the design scheme as the district centers. Over 35% of the land in Tama New Town was allocated to housing, in comparison to only 6% for commercial or industrial purposes. (Senri allocated 11%).⁷⁶ The neighborhood units—the “soft cells” as Konno would call them—differentiated Tama New Town from other metropolitan suburbs in the Tokyo region, linking it to the global new town movement. In fact, researchers Ueno Jun and Matsumoto Masumi argue that there are two notable features that set Tama New Town apart from ordinary suburbs: the *jūku* (neighborhood unit) and the “green network” or parks and pedestrian pathways discussed in more detail below.⁷⁷ The population within Tama New Town’s

⁷⁵ “Tama New Town Minami-Osawa District Factory Outlet Mall: Architectural Concept and Zoning Plan for ‘(Temporary) Minami-Osawa Shopping Center,’” *Mitsui Fudosan*, December 1, 1999, http://www.mitsui-fudosan.co.jp/corporate/news/1999/1201_02/index.html; Ben Johnson, “International News,” *National Real Estate Investor*, January 1, 2000, <http://nreionline.com/mag/international-news-32>. Mitsui Outlet Park was constructed by RTKL International.

⁷⁶ Jūtaku toshi seibi kōdan, “Tama New Town Project Time Line,” in *Tama nyūtaun jigyō gaiyō*, front fold; Shigeru Tenda, “Senri nyūtaun no kore made to kongo: machibiraki kara 50-nen wo hete [Senri New Town From Past, Present to Future ~Fifty Years Since its Opening~].” *GBRC: General Building Research Corporation* 38.3 (07, 2013): 19.

⁷⁷ Jun Ueno and Masumi Matsumoto, *Tama nyūtaun monogatari: Ōrudotaun to yobasenai* [Legend and Topics on Tama New Town: It Cannot be Called an Old Town] (Tokyo: Shikashima shuppankai, 2012), 10.

neighborhood units varied considerably, from 5,000 to 19,000 but nevertheless, as in Senri New Town, it formed the basis of organization and community life. They could also be quite large, reaching as high as 196 hectares, in comparison to Senri New Town's neighborhood units, which averaged between 60 to 100 hectares.⁷⁸ Along with the generous provision of parks, neighborhood centers, and schools throughout the new town, superblocks of housing constituted the neighborhoods units. Like Senri New Town, each neighborhood unit was centered on the scale of the child and contained one junior high school and two elementary schools, with several feeding into one senior high school, a legacy of Clarence Perry's neighborhood unit theory.⁷⁹ Tama New Town's neighborhood units elaborated on the principles set out by Perry, most notably to include the "green network" and to encompass larger areas (they were nearly twice as large).⁸⁰ As in Radburn and Senri New Town, the neighborhood unit was seen as the foundation of daily life in Tama New Town.

The clear hierarchy of scale that organized the neighborhood units and its components at Senri New Town dissolved in Tama New Town. To begin with, the neighborhood units were nearly twice the size of Senri New Town's, making commuting rather difficult for pedestrians and resulting in increased automobile, motorbike, and bicycle traffic.⁸¹ This condition was exacerbated by their form, which abandoned the cluster organization of Senri New Town in favor of a ladder-like organization. Because Tama New Town was organized as a linear city, spanning fourteen kilometers in length, the neighborhood units were arranged in elongated patches perpendicular to the urban spine and major district centers instead of concentrically around the district and neighborhood centers. This affected the connections between the neighborhood units as well as between their components. Instead of arranging parks, neighborhood centers, schools and superblocks around a nucleus of activity, urban components were dispersed evenly

⁷⁸ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 26; Suita City and Toyonaka City Senri New Town Correspondence Committee, "What is Senri New Town?" *Senri nyūtaun machibaraki*, August 1, 2013, <http://senri50.com/c4489.html>.

⁷⁹ Naruse and Takahashi, "Tama New Town," 17.

⁸⁰ Ueno and Matsumoto, *Tama nyūtaun monogatari: Ōrudotaun to yobasenai*, 10-13.

⁸¹ Konno, "Urban Development and Road Building," 15.

throughout the neighborhood units in Tama New Town. Connections were then made by placing public and civic space between the superblocks. For example, Suwa and Nagayama were stitched together with a pair of neighborhood centers.⁸² The same was done in Midori and Toyogaoka. Even in the newer districts in the Hachioji area, neighborhood centers were often located on the periphery of the neighborhood units, adjacent to the trunk roads that defined their boundaries. The school system was also dispersed evenly throughout each neighborhood unit, itself becoming another form of the superblock and forming relationships through adjacency.⁸³ This scheme continued to provide access to schools, parks, and shopping centers within each neighborhood unit, but created more opportunity for spatial exploration than the cluster scheme. This was most clearly expressed in the articulation of Tama New Town's green infrastructure. The "soft cell" became a site of adaptability within a fixed frame that could respond to the changing demands of the time.

Tama New Town's Green Network

The "hard shell, soft cell" scheme created an opportunity for the arrangement of the components of the neighborhood unit in a way that would express the qualities of the landscape through parks, pedestrian ways, and semi-private open space. Ueno and Matsumoto point out that this "green network" was Tama New Town's second distinguishing feature.⁸⁴ The 1965 master plan allocated space for "athletic parks, nature parks, low-volume attractions... neighborhood parks," educational facilities, and pedestrian walkways within the neighborhood units, but a climate of concern about the environment was taking hold by the late 1960s, compelling the JHC to request a special plan examining the treatment of the terrain.⁸⁵

⁸² Ueno, and Masumi Matsumoto, *Tama nyūtaun monogatari: Ōrudotaun to yobasenai*, 12. The neighborhood centers remained important in Tama New Town, even though they were located on the periphery of the neighborhood unit rather than at its center. They continued to provide important amenities for daily life, such as shopping strips, markets, a post office, police box, and doctor's offices.

⁸³ Jūtaku toshi seibi kōdan, "Tama nyūtaun tochi riyō keikaku zu, [Tama New Town Land Use Plan]," in *Tama nyūtaun jigyō gaiyō*, back matter.

⁸⁴ Ueno, and Masumi Matsumoto, *Tama nyūtaun monogatari: Ōrudotaun to yobasenai*, 10.

⁸⁵ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 19; Takeshi Kinoshita and Tetsuo Nemoto, "Tama Nyūtaun Shizen Chikeian: Keian wo Meguru Shokankei no Dainamikusu" [Proposal for Tama New Town Geographical Features: Dynamics of Geographical Relationships] *10 + 1: Ten Plus One* 42 (2006): 124-125.

In fact, when Konno gathered his team of ten planners, they met in secret in order to work on the master plan before the project could be shut down for environmental concerns.⁸⁶ The first detailed studies were carried out by Ōtaka Masato in his *Shizen chikeian* (Nature and Topography Plan) issued the same year as the master plan. Ōtaka proposed a scheme that would correlate each neighborhood unit (Ochiai, Toyogaoka, and Kaitori) with a ridge (this was because valleys were reserved for land readjustment and infrastructure) and preserve the ridgetop's original forests by placing the dwellings in clusters along the periphery of the elongated neighborhood unit.⁸⁷ This was important because the land available for the new town's neighborhood units was mostly virgin land on the ridgetops covered by mostly forests and rice paddies. Ōtaka's draft, which was never implemented, placed dwellings organically around the outer edges of the neighborhood unit in order to reserve the ridgetops as an open or forested greenway, which his team termed "negative structure." The dwellings would be accessed by service roads that snaked between the dwellings and the greenway, not only enabling some existing forests to be preserved on the ridgetops, but also reducing the dwelling costs to 80% compared to the 1965 master plan. Ultimately Ōtaka's plan was rejected by the JHC on account that it had a poor land-use ratio, and other strategies were utilized in its place.⁸⁸ Despite the rejection of Ōtaka's plan, the idea that nature would play an important structural role in Tama New Town remained, carried through in the pedestrian pathways and park systems embedded within each neighborhood unit.

Instead of preserving the ridgetops, the JHC opted to reconstruct nature through a "green network" of pedestrian pathways connected to parks and neighborhood centers. To do this, the TMG dedicated 30% of the land area to open space (20% to parks and designated green land), making it one of the largest land use types in Tama New Town.⁸⁹ Tama New Town's green network was far more complex than Senri New Town's, which mainly provided green space in the form of parks and planted avenues, and instead

⁸⁶ Nihon jūtaku kōdan. *Nihon jūtaku kōdanshi*, 41.

⁸⁷ Minohara, Matsukawa, and Nakajima, *Kenchika ōtaka masato no shigoto*, 58-59.

⁸⁸ Kinoshita and Nemoto. "Tama Nyuu-taun Shizen Chikeian," 124-127.

⁸⁹ UR toshi kikō, *Tama New Town: Since 1965*, 8. This is over six times as much open space per person as the city of Tokyo.

functioned as a framework, or “net” that organized the project.⁹⁰ In Tama New Town’s case, the boundaries of the green network itself became blurred. In addition to 434 hectares of designated park space, 124 hectares were set aside for pedestrian pathways and 274.7 additional hectares of green space were designated within private zones, allowing open green space to permeate the new town.⁹¹ Open space was not simply scaled down to correspond with the various scales of community, but became a conduit for movement and connection. This remarkable green network created a sense of cohesion across the fabric of the new town, helping to articulate the unique characteristics of each neighborhood unit while still expressing the larger garden-city atmosphere of the Tama New Town Project. It became the symbol of the new town itself.

The green network also held in place a series of parks designed to create space for recreation and leisure for Tama New Town’s residents. As in Senri New Town, they too were organized by scale into “central parks, district parks, neighborhood parks, block parks, and *danchi* playlots.”⁹² Eleven central and districts parks were distributed throughout the new town, serving two to three neighborhood units each. They ranged from 6.4 to 21.3 hectares in size and were quite varied in character, from civic (Tama New Central Park) to monumental (Nagaike Park) to recreational (Kamiyugi Park) to bucolic (Oyamadairi Park).⁹³ Supplementing the larger parks were 38 neighborhood parks and green lots, ranging from 1.2 to 14.5 hectares so that there would be roughly two for each neighborhood unit. Equally diverse, these smaller parks had everything from ponds, woods and pathways, to plazas and pavilions. Block parks and *danchi* playlots, meanwhile, made up the remainder of the parks in Tama New Town, with several located within each neighborhood unit.

⁹⁰ Ueno and Matsumoto, *Tama nyūtaun monogatari: Ōrudotaun to yobasenai*, 14.

⁹¹ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyo gaiyō*, 89.

⁹² Ibid, 90.

⁹³ Ibid, 91-92. See the Tama New Town Park and Green Space Placement Map.

The green network set Tama New Town apart from its predecessors and other drab housing estates, encompassing both an intricate network of pedestrian pathways (which Ueno and Matsushita term the “pedestrian deck”) and interstitial spaces that stitched the endless variety of parks into a web that seems to hold the buildings in place.⁹⁴ Although the *Tama nyūtaun jigyō gaiyō* [Tama New Town Project Outline] spends little time describing these spaces, they were expressed quite clearly in plan and had a strong presence in the reality and representation of the new town. This is frequently showcased in the UR Agency’s (formerly known as the HUDC/JHC) advertising as well as publications produced by the Parthenon Tama that celebrated Tama New Town’s landscape.⁹⁵ Konno Hiroshi also spends considerable time detailing the qualities of the pedestrian network as they evolved from the Radburn model in “Urban Development and Road Building: A Brief History of Tama New Town.” Instead of simply aligning the pedestrian pathways with major boulevards connected to the district centers, as in Senri New Town, the pathways connect the parks and interstitial spaces of the dwellings, offering residents a secondary layer of public space. The design team wove them organically through the center of the neighborhood units to the parks and green belts, completely avoiding traffic altogether, even at crosswalks, which were frequently elevated. Several of the pathways were also lined with celebrated trees, such as cherry blossoms and ginkgo, a celebration of Tama New Town’s garden city environment and a reference to its ecological past.⁹⁶ The Tama-Yokayama Natural Path attests to this fact, as “it was designed to be an authentic restoration of the strolling paths of the old Musashino Plain that was once known for its vast woods and rich variety of trees.”⁹⁷ Tama Hills had historically been a site known for its natural beauty, a feature upon which Tama New Town’s planners capitalized. A publication called *Tama nyūtaun shiki no sozoro*

⁹⁴ Konno, “Urban Development and Road Building,” 15; Ueno, and Matsumoto, *Tama nyūtaun monogatari: Ōrudotaun to yobasenai*, 14-16.

⁹⁵ See *Kurashi to. kodomo* [Living and Children], *Kurashi to. komyunitī* [Living and Community], *Kurashi to. shoten* [Living and Shops], *Kurashi to. supotsu* [Living and Sports], (Toshi saisei kikō, 2014), and *Machi • Sumai to kankyō 2013* [Environment of the City and of Dwelling], (Toshi saisei kikō, August, 2013), and Kōekizaidan hōjin tamashi bunka shinkō saidan, ed. *Sora kara machi wo miru: Parutenon tama shūzō shashin shiryōshū* [Seeing the City from the Sky: Parthenon Tama Photographic Data Collection], (Tama, Tokyo: Kōekizaidan hōjin tamashi bunka shinkō saidan, 2014).

⁹⁶ *Tama nyūtaun shiki no sozoro aruki* [The Four Seasons from Tama-Newtown], Toshi saisei kikō.

⁹⁷ Konno, “Urban Development and Road Building,” 15.

aruki [The Four Seasons from Tama-Newtown] by the UR Agency illustrated the richness of Tama New Town's environment through a variety of popular flowers and trees, as well as a map describing ideal promenade routes.⁹⁸ Indeed these luscious walks do live up to expectations, as the great trees and wide pathways shield the pedestrian from the noise of any traffic, offering in its place the illusion of nature.

Tama New Town's designers also utilized the interstitial space between dwellings as a part of the green network from the very beginning of the project. The composition of the neighborhood groups at Senri New Town relied primarily on the orientation and privacy needs of the buildings, which were often set in parallel or box formation in large lawns. This was a result of thinking about each block as a separate component of the project. Tama New Town's superblocks, on the other hand, included the added layer of the green network between superblocks, necessitating greater care in the design and layout of semi-public space within and between the blocks.⁹⁹ This practice began with the first neighborhoods of Suwa and Nagayama, which included pedestrian pathways within the housing estates themselves, allowing pedestrians to move entirely within the neighborhood units to reach the neighborhood centers, schools and parks, rather than along the roadways. The interstitial space would no longer be passive, but rather an active structure in the new town's framework.¹⁰⁰ It also allowed planners to respond directly to the topographical qualities of Tama Hills. The green network evolved over time to become increasingly integrated and dynamic, such that the pathways became wider and more fluid, encompassing a greater variety of types. As they became less linear and more organic, they were able to form stronger connections to the park system, fully integrating the domestic sphere with public open space.¹⁰¹

⁹⁸ *Tama nyūtaun shiki no sozoro aruki*.

⁹⁹ Jūtaku toshi seibi kōdan, "Tama nyūtaun tochi riyō keikaku zu, [Tama New Town Land Use Plan]," in *Tama nyūtaun jigyō gaiyō*, back matter, 3-4. Ownership continued to be administered on the superblock level.

¹⁰⁰ Jun Kai, *Tama New Town at a Glance: 21seiki he mukatte habataku, Tama nyūtaun* [Tama New Town, Flying Towards the 21st Century] (Minami Tama New Town Development Office T.M.G., 1988), 20-21.

¹⁰¹ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 90.

In addition to creating a semi-public zone between different housing estates, Tama New Town's green network also served to break down the barriers between superblocks, modulating the adjacencies of different block types, and create a functional and structural framework for the new town.¹⁰² This was quite distinct from Senri New Town, which generally organized dwelling types and land use by block defined by roadways. In the cases where different dwellings types were included the same block, roadways and topographical change articulate their separation. In Tama New Town, different dwelling types could make up a single superblock, which were often adjacent to schools and neighborhood centers. This is a critical difference, as it created more opportunity for diversity and adjacency and reduced the feeling of stark segregation. The de-clustering and dispersion of schools, parks, and neighborhood centers supported this pattern by plugging directly into the green network and becoming components of the various superblocks themselves. As a result, they were more directly connected to the residential fabric through carefully negotiated adjacencies, rather than as central organizing features around which large blocks of dwellings were arranged. Furthermore, the residential fabric also became more varied, as this system allowed different dwellings types to exist side by side while still being efficiently developed by the TMG, JHC, and TMHS. Superblocks of single-family dwelling, townhouses, and multi-family housing could all face onto the same park or be sewn together by a well-landscaped pedestrian pathways, creating more community connection, and social equality, than those separated by roads in Senri New Town.

Although the green network at Tama New Town has yielded beautiful results and successfully created a verdant and pleasant residential atmosphere, the construction of the new town was actually extraordinarily invasive to the landscape and the present-day calm of Tama New Town's rich garden city environment is rooted in historic controversy. The 1960s environmental crisis was at the forefront the of the public's collective mind and while the new towns were intended to curb the impacts of ad hoc suburbanization at

¹⁰² Kai, *Tama New Town at a Glance*, 20-21.

the urban fringe, the public was quick to recognize the environmental destruction of mass land development by the time Tama New Town was underway and protests erupted throughout the late 1960s, eventually paving the way for the passage of environmental protections by 1970.¹⁰³ When land preparation work began at Tama New Town, ridgetops were systematically leveled and terraced to create embankments, while valleys were filled with the removed earth.¹⁰⁴ Improvement to the river system, which included 2,670-meter channel, was also undertaken in order to manage the anticipated increase in water-drainage needs as a result of the changes to the landscape. Compared to Senri New Town, Tama New Town did make more of an effort to preserve the landscape in its land preparation process. During the preparation process, the healthy trees were transplanted to a nursery field and the topsoil was removed to a holding site. Once the land had been resculpted and the construction completed, the topsoil was mixed with fresh soil and redistributed on the site while healthy trees were replanted.¹⁰⁵ This method resulted in a topography that alluded to the original hilly and forested conditions of the site, but the process by which it was achieved still devastated the landscape and its existing ecosystems. Therefore, the greenery found throughout Tama New Town today generally does not derive from the original landscape at all. Rather, it is a reconstruction of an imagined naturalistic landscape applied upon a fully naked site. The irony of the situation was captured in Hayao Miyazaki's 1994 film "Pom Poko," which followed the comedic but tragic tale of a family of *tanuki* (raccoon dogs) losing their habitat to the project of Tama New Town.¹⁰⁶ Tama New Town continues to sit in an interesting place between the degradation and preservation of the landscape. As a project constructed on a site occupied by more trees than people,

¹⁰³ John W. Dower, "Peace and Democracy in Two Systems," in *Postwar Japan as History*, ed. Andrew Gordon, (Berkeley: University of California Press, 1993), 26; Chalmers Johnson, *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925-1975*, (Stanford, Calif: Stanford University Press, 1982), 284. In 1967 the Pollutions Countermeasures Basic Law was enacted, setting pollution standards for "air, water, soil, noise, vibration, subsidence, and offensive odors. The law was rather ineffective until MITI's "in harmony with the healthy development of economy" clause was lifted in 1970 and the Environment Agency was established.

¹⁰⁴ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 88.

¹⁰⁵ Kai, *Tama New Town at a Glance*, 18-19, 36-37, 42-43. This was probably desirable not only because of the social climate at the time, but also on a more pragmatic level. The soil at Tama Hills was rich and hummusy. Furthermore, because settlements had existed on the site for centuries, there was a number of archaeological sites (954, covering 463.5 hectares) to be excavated before construction. Some sites had artifacts dating back as much as 40,000 years.

¹⁰⁶ Miyazaki, Hayao. *Heisei tanuki gassen ponpoko*. 1994. Tokyo: Sutajio Jiburi. Videorecording.

it most certainly was destructive to its natural ecology and terrain. At the same time, through its construction, it has preserved valuable open space that may have otherwise been built over.

Building over Time: Experimental Districts

The “hard shell, soft cell” scheme also enabled the new town to evolve as it developed over time. Construction for Tama New Town began in 1969 and the first phase of development at Tama New Town (March 1971 to March 1972), saw the rapid construction of dwellings—totaling 8,700—in the neighborhood units of Suwa, Nagayama, and Atago located adjacent to the land designated for Nagayama Center. The JHC, which had purchased roughly one third of the new property designated for the new town, took responsibility for developing most of Suwa and Nagayama, while the Tokyo Metropolitan Government developed Atago.¹⁰⁷ Residents began moving into Tama New Town that same year, even before amenities such as neighborhood shopping centers, pedestrian roads, and even rail stations had begun to be built. This first phase, marked by a distinctly modernist architectural character and discreet separations between superblocks, most closely resembles the clarity of Senri New Town.

As the earliest districts to be constructed, Suwa and Nagayama shared the most in common with Senri New Town, despite the fact that the urban components were no longer organized within a hierarchical cluster. Still quite large, the superblocks were characterized by rows of south-facing apartment slab buildings placed into minimally landscaped and expansive fields set apart from the primary and secondary roads by embankments. The roadways, as in Senri New Town, defined the boundaries of the superblocks with trees and pedestrian pathways, connecting them to neighborhood parks, but did not often extend into them. Instead, less generous local distributors and access roads penetrated the superblocks, although because they fed directly into the primary trunk roads and district distributors, they did not integrate neighboring superblocks very effectively.¹⁰⁸ The six to eleven-story multi-family apartment buildings

¹⁰⁷ Naruse and Takahashi, “Tama New Town,” 13, 25.

¹⁰⁸ Jūtaku toshi seibi kōdan, “Tama nyūtaun tochi riyō keikaku zu, [Tama New Town Land Use Plan],” in *Tama nyūtaun jigyō*

that made up most of the superblocks, were offset from each other rhythmically, leaving space not so much for shared gardens, but for parking places necessitated by an increasing number of privately owned vehicles.¹⁰⁹ The abandonment of the cluster system used at Senri New Town, which had created a hierarchy of space aligned with the walking distances of various life activities, created some difficulties for pedestrians in Nagayama and Suwa, as the distances were more suited to the automobile in the “ladder” system. By the time of Nagayama and Suwa’s construction in the early 1970s, automobiles had indeed become a popular mode of transportation and Tama New Town acknowledged this. The district center, Nagayama Center was located at the northern apex of the two neighborhood units, modulating between them, the rail station, and the land readjustment zone that capped the northern half of Suwa and Nagayama.¹¹⁰ Meanwhile, the much smaller neighborhood centers bridged between the two neighborhood units in the southern half.

The park system too was in its infancy, with one adjacent to the Nagayama neighborhood center and the rest dispersed evenly throughout the neighborhood units, along with the schools, as superblocks of their own. Even though a more moderate plan (*Chūkōseian* or Internal Reclamation Plan) had been adopted in its place, this dispersion pattern began to reflect the Ōtaka 1965 Nature and Topography Plan, which had called for schools to be placed evenly throughout the neighborhood unit, connected by a central spine of preserved space.¹¹¹ The patterns in Suwa and Nagayama also reflect the JHC’s cursory attempts to begin integrating the neighborhood parks with the housing estates in order to mitigate divisions. Ōishi Takerō, who worked at the JHC from 1966 to 1971 on master plans and open space plans for Minami-Tama Kyūryō (South Tama Hills), pointed out that even as early as Nagayama and Suwa, planners were beginning to consider the qualities of the interstitial space between apartment buildings, which prompted

gaiyō, back matter.

¹⁰⁹ Kōekizaidan, *Sora kara machi wo miru*, 4-9.

¹¹⁰ Jūtaku toshi seibi kōdan, “Tama nyūtaun tochi riyō keikaku zu, [Tama New Town Land Use Plan],” in *Tama nyūtaun jigyō gaiyō*, back matter.

¹¹¹ *Ibid.*, 21, 29-32.

the placement of the parks within the superblocks, as well as the provision of pedestrian pathways, most notably a small “promenade,” within the blocks. However, because of the vast quantity of housing, he also notes that “miserable effects of placement and form began to emerge,” as well as a lamentable feeling that many of the parks were simply “leftover space” between the buildings.¹¹² This was the beginning of treating parks and pedestrian pathways not simply as luxurious add-ons to create the illusion of a garden city, but rather to treat them as “‘urban fundamentals’ that collectively made up the framework of the residential area” according Konno.¹¹³ This thinking shaped a new attitude towards the quality of the superblock as designed space. A cursory attempt to bring park space and pedestrian ways into the neighborhood was made, but for the most part superblocks were fully extended into the neighborhood units in a patchwork fashion that required a full invasion of the landscape.¹¹⁴

The dwellings types in Suwa and Nagayama, however, did little to challenge the status quo established in Senri New Town, contributing to the banal exterior spaces that Ōishi found disappointing. The dwellings in Suwa and Nagayama also catered to the same middle-class population that Senri New Town did, although the scale of the structures tended to be larger, with dwellings reaching up to eleven stories thanks to the inclusion of elevators. Only three superblocks, pushed to the southeast corner of Suwa, were designated for the lower-income tenants of *kōei jūtaku* (public housing), while only the southwest corner was reserved for a small grouping of single-family homes that modulated between the superblocks and the land readjustment area. Because the land was purchased by the JHC, most of the superblocks consisted of standardized *kōdan jūtaku* (JHC housing) for the middle class, accounting for over 77% of dwellings constructed in Suwa and Nagayama during the first phase.¹¹⁵ The large provision of *kōdan*

¹¹² Takerō Ōishi, “Purizenteishon 1: Tama nyūtaun no midori no hensen, [Presentation 1: The Change of Tama New Town’s Green],” *Tama nyūtaun ākaibu purojekuto dai 2 hen: midori & jūkankyō shisan no “naritachi” wo himotoku* [Tama New Town Archive Project Part 2: Unraveling the “Structure” of Green & Living Environment Assets], ed. Tama nyūtaun gakkai ākaibu kenkyū buai. (Hachioji: Tama nyūtaun gakkai, 2010), 28, 39.

¹¹³ Konno, “Urban Development and Road Building,” 14.

¹¹⁴ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 29-32.

¹¹⁵ *Tama nyūtaun ni okeru jūkankyō no keisei to kyojū-keitai ni kansuru chōsa kenkyū hōkokusho* [Survey Research Report Concerning the Formation and Residence Form of the Living Environment in Tama New Town], (Tokyo: Tokyo West Tama

jūtaku was in large part a response to the housing crisis, which ended only in 1973, and authorities still felt pressure to supply large quantities of housing rather quickly, paying little regard to quality of space. The majority of the 6,200 dwellings in Suwa and Nagayama were either 2DKs or 3DKs averaging only 50 square meters in floor area, regardless of whether the dwelling was rented or purchased, although there was a range from 1LDK to 4DK units constructed between 1971 and 1979 in Tama New Town.¹¹⁶ These apartments fell into three types: the corridor type, the box type, and the stairwell type. The majority of the apartments in Suwa and Nagayama were of the stairwell type, like those typically found in Senri New Town. Of the 123 buildings constructed by the JHC, fifteen were box types and only three were corridor-types, whereas 22% (four buildings) for low-income residents (*kōei jūtaku*) were of the corridor type.¹¹⁷ The *Gurīnmezon Suwa-2* apartments, an example of the stairwell type, housed primarily the standard 2DK flat, accessed through a shared stairwell directly adjacent to the entrance. Following the models established by the JHC in the late 1950s and 1960s, these units adhered to the principles of separation of sleep and eating through the use of fixed walls and intervening storage cabinets. The dining-kitchen was still central, opening up to a private-south facing balcony. Such familiar and standardized space varied only slightly in the other early apartments built in the area, such as the *Gurīnmezon Toyogaoka-6* apartments built in the Tokyogaoka neighborhood around the same time. *Nagaya ni-chome* apartments followed the same patterns, with units no larger than 70 square meters.¹¹⁸ As the housing crisis ended in the early 1970s and new needs began to emerge, the standardized dwellings of Suwa and Nagayama gradually gave way to more variety as the project progressed.

In fact, several criticisms emerged during the planning and initial phases of Tama New Town's construction that would help to initiate change in the project. One of the most important figures to point

Development Headquarters, 1975), 7.

¹¹⁶ *Jūtaku toshi seibi kōdan*, *Tama nyūtaun jigyō gaiyō*, 29.

¹¹⁷ *Tama nyūtaun ni okeru jūkankyō no keisei to kyojū-keitai ni kansuru chōsa kenkyū hōkokusho*, 17.

¹¹⁸ Plans and general unit information referenced from: "UR Sumai gaido: Tokyoto shibuhan [UR Living Guide: Tokyo City Subdivision Edition]," (Toshi saisei kikō, July, 2014), 60-62.

out the shortcomings of Tama New Town at this time was William A. Robson, a “professor of public administration at the London School of Economics between 1947 and 1962... [and] a leading expert on London and metropolitan government” who hosted visits by the TMG. He also visited Tama New Town himself twice in the late 1960s, according to urban researcher Tsubaki Tatsuya, who gives a detailed account about Robson’s influence on planning in Tokyo in the 1950s and 1960s in “Anglo-Japanese Exchanges in Town Planning—The case of Tama New Town in the 1960s and William A. Robson—” presented at the Tenth International Planning History Conference in London and Letchworth in 2002.¹¹⁹ Robson’s first visit in 1967 “coincided with the election of...left-wing governor of Tokyo” Minobe Ryōkichi, a critic of governmental policy who quickly warmed to Robson. This visit produced both reforms to the organization of the Tokyo Metropolitan Government and also a sharp critique of the homogenous “barrack-like” dwellings that were being constructed in Tama New Town at the time. Robson’s second visit, in 1969, resulted in an even more scathing critique that lambasted the dormitory town approach, calling such projects “fundamentally misconceived” and asserting that Tama New Town “should never have been planned as a mainly residential town for commuters.”¹²⁰ Tsubaki, however, balanced these critiques in his paper by pointing out that suburban residential new towns, rather than fully autonomous new towns were indeed the intention of the TMG at the time, as they saw the rapid construction of dwellings as an absolute imperative during the 1950s and 1960s. A quote by a senior planning officer expresses the attitude within the government quite well: “The choice is, do you leave the families in Tokyo to rot, while you build an ideal new town, or do you find them somewhere reasonable to live and solve what you can at the end.”¹²¹ This would remain the sentiment throughout the 1970s.

¹¹⁹ Tsubaki, “Anglo-Japanese Exchanges in Town Planning,” 1.

¹²⁰ Ibid., 7-8.

¹²¹ “Tama ‘nyūtaun’ no name wo torikesu mekeikaku” [Tama New Town: A Misnomer and Lacking in Plan], *Shukan Shincho* [Shincho Weekly]. no.42, (October 18, 1969, 37), quoted in Tsubaki, “Anglo-Japanese Exchanges in Town Planning,” 11.

Despite this, the TMG's goals for Tama New Town gradually shifted under the socialist Minobe's "reform government," resulting in radical changes to the principles that guided the new town.¹²²

A number of problems that emerged early in Tama New Town's development resulted in a construction standstill between 1971 and 1974. By this time, Suwa, Nagayama, and Atago had been developed and the population of Tama New Town reached 41,240 people.¹²³ This had been the "era of thinking and acting simultaneously," according to Naruse Yasuhiro and Takahashi Kenji of the Tama New Town Society.¹²⁴ However, several key features of the new town were behind schedule because of the enormous burden of constructing large quantities of housing so quickly, such as the construction of schools, public institutions, and even rail stations. As a result, the construction of dwellings was stopped in November of 1946, resuming only after the 9th Development Project Committee released a new set of principles in October 1974 addressing the following concerns of the Tama City Municipal Government: the heavy financial burden placed on local governments, the extension of the railway, the delay of medical facilities, and changes to administrative boundaries. This resulted in a number of changes that would influence the second phase of the project. First, the projected population would be reduced to 80% of the original plan. Secondly, because the number of school districts evolved significantly in Suwa and Nagayama during this time period, it was established that each neighborhood unit would have one junior high school and two elementary schools. Financial assistance through payment advances would aid in the land purchase and construction costs of schools as well. Next, a minimum of 30% of land within the neighborhood blocks would be guaranteed for green or open space, while land for industrial uses would also be set aside. Finally, limits were placed on public housing and single-family housing, which would not exceed 20%

¹²² Naruse Yasuhiro, "Tama nyūtaun 'daiichiji nyūikyo' he mukete no moromo no kufuu to nesshō, [Various Schemes and Negotiations for Tama New Town's 'First Phase of Accommodations,'" *Tama nyūtaun ākaibu purojekuto dai 1 hen: sōsōki ~ chūkōki no yume to kunō wo shiru* [Tama New Town Archive Project Part 1: Understanding the Dreams and Afflictions from Beginning ~ Restoration] ed. Tama nyūtaun gakkai ākaibu kenkyū buhai, (Hachioji: Tama nyūtaun gakkai, 2010), 70.

¹²³ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 6.

¹²⁴ Naruse and Takahashi, "Tama New Town," 24. Naruse Yasuhiro works for the Toshi Sekkei Corporation and is a part of the Tama New Town Society with Dr. Nishiura Sadatsugu of Meisei University.

and 10% respectively.¹²⁵ These new principles shaped the development of the second phase of Tama New Town, reorienting the qualities of the new town.

A number of broader issues also influenced Tama New Town from the mid to late 1970s, affecting not only the neighborhood units and the formation of community space, but also the dwelling itself. Nietzel notes that this period marked a major turning point for Japan and for the JHC.¹²⁶ The first major event was a series of shocks that upset Japan's "plan-rational system," which depended on a unified national goal of high growth. The 1971 "Nixon Shocks" and the 1973 "Oil Shock" challenged the prevailing economic system that underlay the Japanese "Miracle," which, according to Chalmers Johnson, was incapable of dealing with more critical problems despite its success at generating high GNP growth. The "Nixon Shocks" resulted from a shift in United States policy towards China and later the same year a suspension of the "convertibility of the US dollar into gold," ultimately resulting in a revaluating of the yen upward by 16.88% and termination of a system of fixed exchange rates that served as an economic advantage for Japan.¹²⁷ At the same time, MITI began investigating overcrowding in Japan's major cities, recognizing that industry was highly concentrated within a "narrow belt along the east coast."¹²⁸ It responded to this revelation with an industrial relocation program that including beefing up the national rail system. This coincided with increased concern on the part of Tama New Town's planners to include more space for business and industry within the city. The "Oil Shock," however, hit the Japanese conscious much harder, as it relied heavily on petroleum for much of its fuel. Johnson describes the effects that rippled throughout Japan:

"First heating oil began to rise in price and then disappear altogether from the market. Then toilet paper and next household detergents became scarce. The public became convinced that industrial cartels were using the crisis in order to make huge profits. An

¹²⁵ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 7.

¹²⁶ Laura Nietzel, *Living Modern: Danchi Housing and Postwar Japan*, (Ph.D. Dissertation, Columbia University, 2004), 95.

¹²⁷ Chalmers Johnson, *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925-1975*, (Stanford, Calif: Stanford University Press, 1982), 22, 292.

¹²⁸ *Ibid.*, 293.

atmosphere similar to that at the time of the rice riots gripped the country... When the taxi drivers went on strike because of a shortage of liquefied petroleum gas, or housewives rioted in Osaka because of a shortage of kerosene, or long lines were discovered in front of supermarkets that allegedly had toilet paper for sale, the MITI leaders tried to send emergency shipments to calm the panic buying.”¹²⁹

Incidentally, the toilet paper riots that spread throughout the country began in Senri New Town when housewives converged on a supermarket, prompting mass hysteria about household goods throughout the nation.¹³⁰ It should also be noted, as Japanese historian Laura E. Hein has written, that nationalist rhetoric and belief in the bureaucracy strengthened as a result of these crises, turning Japan inward once again. Anxieties about foreign domination and domestic vulnerability formed the backdrop to the second phase of development of Tama New Town.¹³¹

The second key event to impact the development of Tama New Town was the end of the housing crisis the same year, 1973. This prompted Tama New Town to shift its attention from mass quantities of housing to a higher quality of living.¹³² The JHC, which by 1973 had completed 810,000 dwellings in Japan, saw this as a particularly important achievement.¹³³ However, Shinzō Kiuchi and Noboru Inōchi, who wrote “New Towns in Japan” for *Geoforum* in 1976, followed up on Robson’s critiques of Tama New Town, particularly emphasizing the low quality of life characteristic of housing estates constructed by the JHC, including those in Nagayama and Suwa. Kiuchi and Inōchi site “inconvenient traffic services” and a “lower level of public utility facilities” as main reasons for the poor quality of environment at Tama New Town. However, these reasons seem insufficient for the level of dissatisfaction found with early new town residents, with only 27% feeling that the environment was suitable and

¹²⁹ Ibid. 298.

¹³⁰ Senri nyūtaun machibiraki 50-nen jigyo jikkō inkai, *Senri Newtown Map: Senri nyūtaun mappu*, (Senri nyūtaun saisei renraku kyōgikai, March, 2013).

¹³¹ Laura E. Hein, “Growth Versus Success,” in *Postwar Japan as History*, ed. Andrew Gordon, (Berkeley: University of California Press, 1993), 117.

¹³² Naruse and Takahashi, “Tama New Town,” 34; Sōmushō tōkei, “Jūtaku • tochi tōkei chōsa to jūtaku jijō no utsurikawari [Statistic Report of Housing and Land, and Change in Housing Conditions],” *Statistics Japan*, 2003, <http://www.stat.go.jp/data/jyutaku/2003/panflet/5jyu.htm>

¹³³ Shinzō Kiuchi and Noboru Inōchi, “New Towns in Japan,” *Geoforum* 7, (01, 1976), 3.

attractive.¹³⁴ Other reasons, such as the condition of the landscape, the small size of the dwellings, and the homogeneity of the superblocks also played a role. First of all, it takes a significant amount of time for a landscape ravaged by construction to recover its beauty and health. This would have certainly not yet been the case by 1976. Secondly, the housing estates in Suwa and Nagayama were the most banal to be found in the entire project. Not only were the buildings repetitive, but also their arrangement left the semi-public space in between uninspiring. Finally, the 2DK apartment type proved to be simply too cramped for the average family of four. Nietzel further points out that “refuse the *danchi*” movements began to take hold at this time, as families grew increasingly wary of the environmental and financial costs of their construction.¹³⁵ After over a decade of high-speed growth, a barrage of new products on the market, and incomes over eight times higher than in 1955, expectations for the quality of life for the middle-class had changed.¹³⁶ While Japan had now met its goal of “*ichi setai ichi jūtaku* (one house for every household),” quality of life now became the key to housing in Tama New Town.¹³⁷

A concern for quality became evident in three ways in the second phase of Tama New Town’s development, which includes Kaitori, Toyogaoka, Ochiai, Kajima, and Matsugaya, as well as Tsurumaki three years later. The first was the development of Tama Center as a large commercial heart of the new town. The second was an increased emphasis on the interstitial space between both the blocks and the buildings by creating stronger links between parks and rearranging building orientation to create more deliberate semi-private spaces. The second phases, while still relying on the patchwork arrangement of neighboring Suwa and Nagayama, began to more closely approximate Ōtaka’s Nature and Topography Plan by creating clear pedestrian ways running through the center of the neighborhood units, connecting a series of parks that modulated between different superblocks. Nevertheless, the plans were still far more

¹³⁴ Ibid., 10-11.

¹³⁵ Nietzel, *Living Modern*, 95-96.

¹³⁶ Ministry of Internal Affairs and Communications: Statistic Bureau, “20-6 Average of Monthly Income and Expenditures per Household (Workers’ Households) -All Japan (1955--2010),” *Chapter 20 Family Income and Expenditure*, accessed April, 2015, <http://www.stat.go.jp/english/data/chouki/20.htm>.

¹³⁷ Naruse and Takahashi, “Tama New Town,” 34.

pragmatic than Ōtaka's and did not make space for preserving ridgetops. This gradually led to a more complex relationship between green open space and everyday life as it transformed from a means of ornamenting the new town to part of its urban structure. Finally, the dwellings themselves grew larger, breaking down the dogma of the original 2DK form in order to accommodate growing demands for space and technology within the home.¹³⁸

By the 1970s, the JHC's housing stock became severely standardized, homogenized, and closed, but its "role... as 'vanguard' had already been fulfilled."¹³⁹ Suzuki Shigebumi, who had helped design the 51C Apartment that would inspire the nLDK system, lamented in "*51C" kazoku o ireru hako no sengo to genzai* ["51C" The Box in which Families are Put, Before the War and Today] that because housing often fronted the streets—or parking lots in Tama New Town's case—and was guarded by steel doors and grated windows, community was lacking. Equally quick to criticize the units themselves, he further points out that the 3DK was nothing more than a 2DK with another room simply pasted on, rather than the result of carefully conducted studies.¹⁴⁰ A more common criticism at the time was directed at the small floor areas of public housing units. As Nietzel writes, by the 1970s "living modern meant living small, living far, living expensive."¹⁴¹ In Tama New Town, this resulted in a gradual increase of floor area per dwelling in JHC constructed units, although not in housing constructed by the Tokyo Metropolitan Housing Corporation, which hovered around 60 square meters per dwelling well into the 1990s. By 1980, the average floor area per dwelling constructed by the JHC rose from less than 50 square meters in 1975 to nearly 100 square meters in 1980.¹⁴² Within the standardized nDK Apartment system, increases in unit size finally began to create opportunity for experimentation.

¹³⁸ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 29-32.

¹³⁹ Nietzel, *Living Modern*, 97.

¹⁴⁰ Suzuki, "*51C" kazoku o ireru hako no sengo to genzai*, 24, and 29.

¹⁴¹ Laura Nietzel, *Living Modern: Danchi Housing and Postwar Japan*, (Ph.D. Dissertation, Columbia University, 2004), 98.

¹⁴² UR toshi kikō, *Tama New Town: Since 1965*, 33-40.

New dwelling types were also introduced in the second phase of Tama New Town, enabling the JHC to offer more variety and space to residents. Townhouses became particularly popular by the early 1980s. They also allowed the JHC to experiment more with building placement. Earlier approaches arranged public housing buildings around Radburn-like cul-de-sacs, forming small pockets of space between buildings. The parallel formation was one of the most common arrangements in these approaches. In Japan, this resulted in a rather banal living environment that was not directly connected to any meaningful green infrastructure. The JHC offered an alternative to the large blocks of modernist housing or single-family dwellings that dominated its landscape when it constructed the first group of townhouses in Tama New Town's Suwa neighborhood in 1979. This project, called the Suwa Townhouses, resulted in the construction of 58 low-rise units, and created a sense of community in an environment otherwise immune to it. The two to three story Suwa Townhouses took advantage of the surrounding topography with delicate siting, forming pockets of lush garden space within the block. With the kitchen in the back of the house and a small private garden in the front, the dwellings themselves departed from the nDK model, as single-family dwellings in Senri New Town often did, leaving the plans more open and fluid. The units were also offset from each other in both plan and section to create visual variety in the elevation and spatial variety in the common space, which includes gardens and play lots. Parking was clustered in two locations off the main road, allowing more space for the gardens to reflect the verdant forest to its east.¹⁴³ Superblocks of townhouses opened in Ochiai and Tsurumaki in 1982, with floor plans ranging from 2LDK to 5LDK and an average floor area of 96 square meters. They reimagined the arrangement of the superblock. In Ochiai and Tsurumaki the townhouses were arranged more informally and sometimes placed within the same superblock as larger apartment buildings. Cars could still enter the blocks, but the small scale of the buildings—two to four stories in height—created a more neighborly intimacy, while adjacencies to the Narahara and Takano Parks with views of Mt. Fuji, gave meaning to the interstitial

¹⁴³ “Jukusei suru shūgou jūtaku: shūjū no honshitsu wo tō [Matured Collective Housing: Questioning the Essence of Dwelling],” *Jūtaku Kenchiku* 8, no.440 (08, 2013): 4-19.

space between the buildings.¹⁴⁴ A variety of types coupled with the offsetting of the units created a new richness of both interior and exterior space that stood in stark contrast to the modernist apartment slabs nearby, pointing towards a shift from quantity to quality in Tama New Town.¹⁴⁵

This shift towards larger units, more rooms, and better quality interstitial space reflected a refinement of the meaning of the modern lifestyle in Tama New Town in the late 1970s. Architectural historian Inagaki Eizō reinforced this assertion that the 1970s became a time of concentration on housing developments, with priority placed on lifestyle rather than monumentality in *Nihon no kindai kenchiku* [Modern Architecture of Japan].¹⁴⁶ According to Naruse and Takahashi, new housing was intended to reflect a new lifestyle characterized by the creation of a unique life identity, which would be reflected in hobbies, unique “life spaces,” and enjoyable life activities.¹⁴⁷ A generational shift underway in the 1970s amplified this. While the young families moving into Senri New Town during the 1960s mainly belonged to the *Shōwa futaketa* generation “born from the mid-1930s to the mid-1940s, new values that emphasized “personal life-style” began to emerge in the generations that followed, as they “lack[ed] any direct experience of the hardships prior to the high growth decades.”¹⁴⁸ This distinction is quite important, as many of the young families moving into Tama New Town, particularly in the late 1970s, would have been born after the war and therefore would have shared a different set of expectations than those born a decade or two earlier. Further, consumption in Japan continued to increase dramatically in the 1970s, despite the fact that the high-growth period had ended in 1973.¹⁴⁹ In fact, as Taira Koji points out, concern about lifestyle in the 1970s superseded the preoccupation with high economic growth during the 1960s, an assertion reinforced by Nietzel, who argued that it became a problem of the lifestyle of “the

¹⁴⁴ Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 37.

¹⁴⁵ Naruse and Takahashi, “Tama New Town,” 34.

¹⁴⁶ Eizō Inagaki, *Nihon no kindai kenchiku* [Modern Architecture of Japan], (Tokyo: Chuokōrin bijutsu shuppan, 2009), 304.

¹⁴⁷ Naruse and Takahashi, “Tama New Town,” 39.

¹⁴⁸ William W. Kelly, “Metropolitan Japan,” in *Postwar Japan as History*, ed. Andrew Gordon, (Berkeley: University of California Press, 1993), 198-199.

¹⁴⁹ Charles Yuji Horioka, “Consuming and Saving,” in *Postwar Japan as History*, ed. Andrew Gordon, (Berkeley: University of California Press, 1993), 260.

nation as a whole.”¹⁵⁰ Ueno and Matsushita mark the 1980s as a new phase in Tama New Town’s development, as well as noting that in 1986 Japan had a “bubble economy” and the consumeristic demands placed on the new town project had replaced its original objectives.¹⁵¹ While Tama New Town’s first fifteen years would look remarkably different from what followed, Konno’s “hard shell, soft cell” scheme proved effective in responding to the changing needs of half a century.

Tama New Town took over forty years to complete (some parts are still under construction today) and it has witnessed enormous shifts throughout its development, from the end of the housing crisis in 1973 to the revision of the New Towns Act in 1986. The first and second phases of the 1970s provided an important reference point for the development that followed, establishing the essential urban elements that would define Tama New Town’s unique residential environment. Suwa and Nagayama, the first neighborhood units, were modeled the most closely after Senri New Town, with large, homogenous superblocks of public housing units arranged in parallel formation, but the “hard shell, soft cell” framework introduced by Konno and his team made Tama New Town flexible and adaptable over time. Within a fixed skeleton of infrastructure, dwellings, schools, parks, and neighborhood centers intermingle inside the neighborhood units while district centers anchored the community and connected it back to Tokyo. The flexibility of the “soft cells” created an opportunity for designers to respond to the evolving demands of Tama New Town’s residents with new dwelling typologies and a variety of interstitial spaces and conditions. The generous provision of green space, a hallmark of the postwar residential new town, also took a new tone, becoming a fabric that wove the new town together into a unified whole, even as the buildings and the district centers themselves changed. Tama New Town was a project of experimentation and indeed it had to be. As consumer culture engulfed the middle-class and the housing crises was brought to an end, the high quantity of reasonably clean and somewhat affordable dwellings produced by

¹⁵⁰ Koji Taira, “Dialectics of Economic Growth,” in *Postwar Japan as History*, ed. Andrew Gordon, (Berkeley: University of California Press, 1993), 170; Neitzel, *Living Modern*, 99.

¹⁵¹ Ueno and Matsumoto, *Tama nyūtaun monogatari: Ōrudotaun to yobasenai*, 20-21.

the JHC could no longer sufficiently meet the needs and desires of middle-class families. The district centers took on a more commercial role, while dwellings began to grow larger and more varied. Underneath these changes, the aspirations of the new town remained embedded in the urban principles set out by Konno and his team: to provide a high quality modern residential environment within a rational and organized structure.

Chapter 7: Conclusion

Senri New Town and Tama New Town mark two different eras of Japan's postwar new town project. As Japan's first new town, Senri New Town established a model for the development of new towns by municipal governments and the JHC that employed Western-style planning techniques within a Japanese context while Tama New Town refined this model, making it more responsive to incremental development. Senri New Town introduced a rational, modern approach to the planning and building of suburban communities in Japan, offering an alternative to the haphazard suburban sprawl that so frequently consumed the rural landscape with little regard for the preservation of open space or its ecological heritage. Hoping to construct an ideal modern residential environment, the designers of Senri New Town, notably Nishiyama Uzō and later the Takayama Eika Laboratory, prioritized not only the provision of infrastructure and services, but also space for community, family, and children. Using the neighborhood unit of the American garden suburbs and the civic centers of postwar CIAM, Senri New Town offers a variety of elements to serve the needs of daily life, including open space in its many parks, shopping in its district centers and neighborhood shopping centers, schools within walking distance, and tree-lined pedestrian pathways. With both multi-family public housing units and single-family dwellings, it encouraged the newly imagined middle-class lifestyle that characterized Japan's aspirations in the 1950s and 1960s, enforcing on its residents a new paradigm of domesticity.

Within a new framework of “hard shells, soft cells,” Tama New Town pushed the urban principles established at Senri New Town—the neighborhood unit, the green network, and the civic center—in new directions. Faced with changing pressures as the housing crisis ended and new generations shaped by the growing tide of consumerism demanded a higher quality of life, Tama New Town reoriented its objectives around crafting a richer residential environment that offered residents more space and variety.

New opportunities to shape the interstitial space between buildings emerged as the JHC introduced more spacious floor plans and a greater variety of dwellings types—such as the Suwa Townhouses, and the pedestrian pathways, now located within the neighborhood units rather than along their periphery—became more complex, forming a network between the superblocks, schools, and parks. The district centers also began to embrace the consumerism of the 1970s and 1980s, making space not only for civic functions and routine shopping, but retail and entertainment as well. Tama New Town became a model for how the postwar new town could respond to a changing world. Today, it is constantly reimagined as each new superblock is constructed and its fabric, now an architectural *mélange* held in place by a luxurious green network of pedestrian pathways and parks, reflects the changing forces of time.

Such visionary ambitions often draw sharp criticism as well, and postwar Japanese new towns have become the subject of considerable debate over time. Tama New Town in particular often becomes the case study for such debates. Even before the development of Tama New Town began, protests held by villagers and townspeople of the Tama region erupted in Hibiya Park, successfully shutting down provisions in the National Capital Sphere Redevelopment Act that would designate the area as a greenbelt.⁵⁶⁵ Resistance again emerged from the region once the project began development, forcing the planners to exclude existing villages and towns from the master plan, which would instead be reorganized in the valleys using land readjustment techniques.⁵⁶⁶ Such criticism was not limited to the public and by the 1970s academic discourse begins to reflect growing concerns over the quality of the residential environment in postwar new towns. One of the most influential contemporary critics of Japanese postwar new towns was William A. Robson, a professor at the London School of Economics in the late 1940s and early 1950s who had close ties with planners in the Tokyo Metropolitan Government through the Tokyo Institute for Municipal Research. Robson, who visited Tokyo in 1967 and 1969, blasted both the

⁵⁶⁵ Marco Amati, *Urban Green Belts in the Twenty-first Century*, (Aldershot, England: Ashgate, *eBook Collection (EBSCOhost)*, EBSCOhost, 2008), accessed April 19, 2015, 25-27.

⁵⁶⁶ Yasuhiro Naruse and Kenji Takahashi, “Tama New Town,” edited by Sadatsugu Nishiura, presented at Steedman Summer Travel Fellowship Meeting on Tama New Town, Tama City, Japan, August 11, 2014, 11.

structure of the TMG, which he saw to be obsolete, and the homogenous “barrack-like” quality of new town *danchi* (housing estates) in Japan, later publishing a report that stated that Tama New Town was “fundamentally misconceived.”⁵⁶⁷ Robson was implying that Tama New Town was merely a residential commuter suburb, not a new town at all. As Tsubaki Tatsuya has shown, this was entirely the point of the first wave of new town construction in Japan, as the New Residential Town Development Act of 1963 was enacted for the purpose of providing adequate housing stock for urban populations strained by the housing crisis, not building an ideal independent and self-governed satellite city. This was a conscious decision on the part of the state, not a failed attempt to fully mimic the British new town.⁵⁶⁸

Nevertheless, the residential commuter suburb model of new town planning in Japan has resulted in some problems for its residents, as Kiuchi Shinzo and Inōchi Noboru has shown in “New Towns in Japan” written for *Geoforum* in 1976 and Tanabe Hiroshi has shown in “Problems of the New Towns in Japan” in *GeoJournal* in 1978. They too distinguish Japan’s residential new towns from self-contained industrial new towns, referring to them as “large-scale dormitory new towns” that share more in common with American suburbs than European new towns. They point out that this pattern, a result of the JHC’s “anxious” mission to supply large quantities of housing, which led to heavy financial burdens on local governments, slow development, inconvenience to local communities, long commuting times, and an overall low quality living environment.⁵⁶⁹ Tanabe builds on these criticisms, lamenting that the new towns did not preserve the environment as well as they claimed and yet still failed to sufficiently supply much needed services and jobs to its residents. He also reinforces concerns about long commuting times imposed on residents, who more often than not work in the city rather than the new town, calling the new

⁵⁶⁷ Tatsuya Tsubaki, “Anglo-Japanese Exchanges in Town Planning—The case of Tama New Town in the 1960s and William A. Robson—” *Discussion Paper Series*, (Nagoya: Institute of Economics, Chukyo University, November 2002), 1, 6-8, and Robson, W. A. *Second Report on Tokyo Metropolitan Fovernment*, (Tokyo Metropolitan Government, Tokyo, 1969) in Tsubaki, “Anglo-Japanese Exchanges in Town Planning,” 8.

⁵⁶⁸ *Ibid.*, 10-11.

⁵⁶⁹ Shinzo Kiuchi and Noboru Inōchi, “New Towns in Japan,” *Geoforum* 7, (01, 1976): 1-3, 10-11.

town a “town of transients.”⁵⁷⁰ Some of the concerns voiced in the late 1970s were addressed in the 1980s, particularly with the revision of the New Residential Town Development Act in 1986, which enabled more industry and commercial zones to be built in the new town.⁵⁷¹ However, the postwar new town continues to face challenges today and largely remains a dormitory settlement. As the population shrinks while the nation faces the phenomenon of the “aging society,” the postwar new town has proved challenging for elderly citizens, as Estelle Ducom has shown in her paper “Tama New Town, West of Tokyo: Analysis of a Shrinking Suburb,” where she cites the “massive population ageing and loss, convulsed neighborhoods, buildings emptiness, landscape degradation, [and] urban life erosion,” as some of the challenges facing new towns today.⁵⁷² Meanwhile, books such as Yamamoto Shigeru’s *Nyūtaun saisei: jūkankyō manejimento no kadai to tenbō* [New Town Restoration: Residential Environment Management Topics and Views] (2009) and Ueno Jun and Matsumoto Masumi’s *Tama nyūtaun monogatari: Ōrudotaun to yobasenai* [Legend and Topics on Tama New Town: It Cannot be Called an Old Town] (2012), seek to address many of these issues through the revitalization of new town communities and housing and refute the assertion that the postwar new town project has failed.

This thesis has not sought to evaluate the outcomes of the postwar new town or determine whether or not it was a success; this is a subject that still deserves considerable debate. Rather this thesis has sought to place the postwar new town project within its historical context, both Japanese and international, in order to better understand the forces and aspirations that shaped its process of development. It has attempted to articulate the many threads of thought embedded in the new town—from the neighborhood unit of the American garden suburbs to the civic center of CIAM—and begin to show the ways in which these influences were appropriated and adapted by Japanese urban planners and architects within their own

⁵⁷⁰ Hiroshi Tanabe, “Problems of the New Towns in Japan,” *GeoJournal: An International Journal on Human Geography and Environmental Sciences* 2, no.1, (1978): 39-46, accessed January 27, 2015. <http://www.jstor.org/stable/41142068>.

⁵⁷¹ Hiroyoshi, Kano, “Tama New Town: The Growth of a New Residential Area in a Suburb of Tokyo,” in *Growing Metropolitan Suburbia: A Comparative Sociological Study on Tokyo and Jakarta*, ed. Hiroyoshi Kano, (Jakarta: Yayasan Obor Indonesia, 2004), 140.

⁵⁷² Estelle Ducom, “Tama New Town, West of Tokyo: Analysis of a Shrinking Suburb,” (Paper, University of Tsukuba, 2008), 3, accessed September, 2014, <https://halshs.archives-ouvertes.fr/halshs-00203107>.

domestic landscape in order cultivate a thriving modern community while addressing the very real needs of postwar Japan. Although it is true that the model of the large-scale dormitory new town project has created challenges for its residents, such as long commute times and homogenous landscapes, it also created a reasonable alternative to suburbs built without any concern for the residential living environment, infrastructure, or the landscape, and has afforded Japanese urban planners and architects the opportunity to experiment with new forms of domesticity on the scale of the dwelling as well as the city.

Glossary

51C Apartment.....An apartment prototype developed for public housing in 1951 by the Yoshitake Yasumi Laboratory at Tokyo University based on research conducted by Nishiyama Uzō. The apartment featured two Japanese-style rooms, a combined dining-kitchen, and a bathroom. It was the predecessor of the nDK Apartment.

bunku (sub-district).....A sub-district at Senri New Town consisting of 4,000 to 6,000 people and served a radius of 300 to 500 meters. This was seen as the basic urban unit of daily life and consisted of neighborhood centers, neighborhood parks, and neighborhood groups. It was organized around one lower elementary school.

chiku (district).....A grouping of *jūku* (neighborhood units), totally 30,000 to 50,000 people, usually organized around a district center that contained supermarkets, commercial and retail space, a rail station, and other important civic amenities.

CIAM (*Congrès International d'Architecture Moderne* or International Congresses of Modern Architecture).....An organization of architects who held a series of congresses on various themes concerning modern architectural practice between 1928 and 1959. It included prominent figures such as Le Corbusier, Josep Lluís Sert, Ernesto Rogers, Ernst May, Maekawa Kunio, and Tange Kenzō to name a few, and had an enormous impact on architectural and urban planning across the world through its publications and the practice of its members.

City Planning Institute of Japan (CPIJ).....A professional urban planning research institute under the Ministry of Education and Science founded in 1951. It is composed mainly of academics, researchers, and bureaucrats.

City Planning Law.....(1919) The nation's first comprehensive city planning system that extended to cities throughout the country. It consisted of land-use zoning regulations, a building code, a building-line system, facility designations, and a land readjustment policy. It was replaced by the New City Planning Law in 1968, which still stands today.

civic center.....One of the core principles presented at the CIAM 8 “Heart of the City” congress in 1951 that marked a shift towards a human-centric approach to urban planning, and the brainchild of Josep Lluís Sert, Ernesto Rogers, and the English MARS group. The group, most notably Sert, hoped the pedestrianized civic center would foster community life and social engagement.

dainingu-kitchin (dining-kitchen).....A combined dining-kitchen room that made space for a modern kitchen unit and a Western-style dinette set so that a family could share meals together.

danchi (housing estate).....A Japanese housing estate. This term typically refers to large grouping of multi-family housing units, most often public housing constructed by the JHC or local public housing agencies. Laura Nietzel's dissertation at Columbia University dissects the complexity of the *danchi* in the 1950s and 1960s and its role in construction and standardization of “modern living.”

Denenchōfu.....The first garden suburb constructed in Japan in 1918 outside of Tokyo. The project was privately developed by Shibusawa Eiichi for the *Denentoshi kabushiki-gaisha* (Garden City Corporation) and drew upon garden city theory, which it reframed in a Japanese context.

Dōjunkai Foundation.....A foundation established through donations from foreign countries to construct emergency dwellings following the 1923 Great Kantō Earthquake. Its research arm, which included Uchida Yoshizō and Kishida Hidetō, pioneered reinforced concrete and fire-resistant housing blocks in Japan. It was the predecessor of the JHC and was the first organization to supply public housing in Japan.

Edo.....The name for Tokyo and seat of the Tokugawa shogunate before the Meiji Restoration. In 1868, the new government moved the imperial capital from Kyoto to Edo, renaming it Tokyo, or “eastern capital.”

Existenzminimum.....The “minimum dwelling” proposed at CIAM 2 in Frankfurt in 1929. Ernst May was instrumental in the development of this idea, which was concerned with the improvement of living conditions of the masses through the rational design of dwellings, infrastructure, and the environment.

garden city.....A city of no more than 32,000 people that, together with a new central of 50,000 people and network of other garden cities (called the social city), would supplant the existing industrial city, ridding society of its ills. Ebenezer Howard proposed this idea in *Garden Cities of To-morrow: A Path to Real Reform* in 1898. The garden city would be collectively owned and self-contained by a greenbelt and various elements would be organized rationally around a town center.

garden suburb.....A derivative of the garden city that appeared in the United States, Japan, and to some degree in England as well, the garden suburb contained many of the features of the garden city, such as the greenbelt and healthful living environment, but was privately developed with lots sold directly to residents. In the United States, Clarence Perry’s neighborhood unit was incorporated into the garden suburb, which used the elementary school as building block of the community.

Greater London Plan 1944.....(1944) A plan for the decentralization of the population and industry of London that was overseen by Sir Patrick Abercrombie. The plan proposed a ring of low-rise suburbs around London that would be surrounded by greenbelt. Beyond the greenbelt, eight new self-contained satellite towns would be constructed. The new satellite towns would have industrial and commercial zones, but would still be anchored back to London.

Income Doubling Plan.....(1960) A comprehensive economic policy aimed at doubling both national and individual incomes by increasing investment, production, and export that was put in place by Prime Minister Ikeda Hayato.

Ishikawa Hideaki.....(1893-1955) The director of urban planning in Tokyo, he also taught at Tokyo University. Konno Hiroshi was among his students. He produced a visionary plan to rebuild Tokyo in 1946 that was never constructed but laid the groundwork for the first NCRDP.

Japan Housing Corporation (JHC)..... (1955) A semi-public agency established in 1955 to provide large quantities of housing in cities, suburbs, and new towns across Japan in response to the housing crisis. This was often achieved through the construction of large housing estates of middle-class apartment blocks, where they pioneered new construction technologies and introduced new features, such as stainless steel sinks, into the modern dwelling. The JHC was instrumental in the construction of postwar new towns.

Housing Loan Corporation Act..... (1950) An act that established the Housing Loan Corporation to supply low-interest housing loans through the central government for housing construction in order to encourage home ownership.

jūku (neighborhood unit).....The fundamental building block of Japan's new towns, the *jūku* derives from the work of Clarence Perry, who proposed the neighborhood unit as the building block of community life. *Jūku*, like Perry's neighborhood unit, includes shops, schools, and parks to support the residents. In Japan, the *jūku* is organized around one upper elementary school. At Senri New Town, the *jūku* typically spanned ten hectares and accommodated 10,000 people, while at Tama New Town, they reached up 196 hectares and accommodated anywhere from 5,000 to 19,000 residents.

Kansai.....A region in western Japan on the main island of Honshū that includes Osaka City, Kobe, Kyoto City, and Nara and covers Mie, Nara, Wakayama, Kyoto, Osaka, Hyōgo, and Shiga Prefectures. The Kansai region has a significant cultural heritage and is the second largest region in Japan. It is also culturally quite distinct from Kantō, the region around Tokyo. In architecture and urban planning, this distinction is often symbolized by a rivalry between schools of architectural thought in Kyoto University and Tokyo University.

Kantō.....A region in eastern Japan on the main island of Honshū that includes Tokyo and Yokohama and covers Gunma, Tochigi, Ibaraki, Saitama, Tokyo, Chiba, and Kanagawa prefectures. It is the largest region in Japan.

kinrin gurūpu (neighborhood group).....A grouping of multi-family apartments grouped around a play lot at Senri New Town

kinrin sentā (neighborhood center).....A small shopping center provided in each neighborhood unit at Senri New Town and Tama New Town. These were designed to be within walking distance of dwellings and provide access to daily amenities, such as supermarkets, small shops, medical clinics, post offices, and police boxes. They also included urban furniture in order to foster community and make space for housewives and small children to gather.

kōdan jūtaku.....Public housing constructed for mainly middle-class residents by the JHC.

kōei jūtaku.....Public housing constructed for low-income residents by local housing agencies under the 1951 Public Housing Law.

kōsha jūtaku.....Public housing constructed by local housing agencies, such as the Osaka Prefectural Housing Corporation (OPH) for mainly middle-class residents.

Kishida Hideto.....A graduate of Tokyo Imperial University's Department of Architecture and later a professor at Tokyo University, Hideto was a compatriot of Uchida Yoshizō, with whom he designed prototypes for the Dōjunkai apartments. Tange Kenzō was among his students.

Konno Hiroshi.....(1924-?) The head of the design team for Tama New Town's master plan at the JHC. Konno graduated from the Department of Civil Engineering at Tokyo University in 1924 and studied under Ishikawa Hideaki. He also worked for the Ministry of Construction, and the Urban Development Engineering Co, Ltd.

Land Readjustment Act.....(1954) Consolidated existing land readjustment laws from the 1919 City Planning Law and made it possible for the national government to subsidize large projects. It also eased the purchase of large tracts of land for these projects, particularly new towns, by allowing the JHC to pre-emptively purchase lots that came to market to speed the acquisition of the 40% of land holdings required for development.

machi.....Directly translated as “small town,” “city,” or “neighborhood,” *machi*, according to Carola Hein, is a key psychosocial and spatial urban unit of the Japanese city that has influenced the way in which the nation has absorbed foreign planning ideas.

Meiji Restoration.....(1968) A series of events in 1868 that restored imperial rule to Japan under Emperor Meiji, effectively ending over two-and-a-half centuries of feudal rule and transforming the political, social, and economic structure of the nation.

Minamata Disease.....A disease caused by organic mercury poisoning in the fishing village of Minamata in the 1950s and 1960s that resulted in severe illness and dozens of deaths. It was emblematic of the environmental crisis, as well as neglect on the part of industry and government alike.

Ministry of International Trade and Industry (MITI).....A powerful arm of the government founded in 1949 to promote and nurture economic and industrial growth. It enjoyed enormous oversight of Japan’s economic development during the high-growth period.

Musashino Plateau.....A fluvial terrace in Kantō region of Japan located between the Tama and Arawaka rivers and makes up much of Western Tokyo.

nagaya.....A wooden townhouse or row house dating back to the Tokugawa Period traditionally built along narrow alleys or streets in Japanese cities.

nDK Apartment.....The standardized modern public housing prototype produced by the JHC in the postwar period. The “n” refers to the number of rooms, and the DK to a combined dining-kitchen room.

National Capital Region Development Plan.....The first NCRDP was drafted in 1958, designating a greenbelt and series of satellite cities around Tokyo in order to control urban sprawl. The greenbelt was eliminated in 1968 with the second NCRDP and replaced with a Suburban Development Area.

Neo-Tokyo Plan.....(1959) An unrealized proposal to infill the bay with 400 million square meters of landfill along the coast of Tokyo Bay in order to produce commercial, industrial, residential, and park space for the city proposed by the Industrial Planning Conference.

New City Planning Law.....(1968) A comprehensive revision of the 1919 City Planning Law designed to control rapid urban sprawl by controlling the conversion of agricultural land into urban or suburban land and ensuring the construction of infrastructure, parks, and schools before or along with development. The law further entrenched the central government’s role in city planning by creating a hierarchy of levels between the central, prefectural, and municipal governments.

New Residential Town Development Act.....(1963) Spawned the first generation of postwar Japanese new towns, including Senri New Town, Tama New Town, and Kozōji New Town and later the construction of new towns across the country. Until a revision in 1986 it prevented any serious construction of industrial or commercial zones in new towns, resulting in what is today known as “bedtowns” or residential new towns economically and culturally reliant on the central city.

new town.....A publicly constructed satellite town during the postwar period, often to absorb overflow population from the city, especially in the case of Japan.

Nishiyama Uzō.....(1911-1994) A graduate of Kyoto Imperial University’s Department of Architecture in 1933, Nishiyama was a controversial figure adored in Kansai and largely ignored in Kantō. He was a reformist deeply interested in modernist Western planning theory who wrote prolifically

throughout his life, and his research into the separation of eating and sleep heavily influenced the development of the 51C Apartment. He also participated in the early planning stages of Senri New Town, where he introduced the neighborhood unit, and later in proposals for the Osaka World Exposition 1970.

Ōtaka Masato.....(1923-2010) A member of the Metabolist group, Ōtaka worked for Maekawa Kunio as his project architect early in his career, most notably on the Harumi Apartments. He prepared the Nature and Topography Plan of 1965 for Tama New Town, although it was not used, and built the pedestrian deck and pedestrian pathways at both Tama Center and Minami-Ōsawa Center.

Plan for Tokyo (1960)..... An unrealized plan for Tokyo Bay prepared by Metabolist Tange Kenzo characterized by a linear megastructure called the “Civic Axis” that spanned the bay to create new space for the city. It contained core communications infrastructure, housed important urban functions, and organized residential units that branched off perpendicularly from the spine.

Public Housing Law.....(1951) A law that enabled local public housing agencies to construct apartment units for low-income residents using central government subsidies.

Reconstruction Plan for Tokyo.....(1946) An unrealized proposal for the reconstruction of Tokyo announced by Ishikawa Hideaki in March, 1946. The plan proposed a series of satellite cities around Tokyo that would house political and economic functions, while the capital city itself would be developed as an industrial city. This plan called for a population limit of 3.5 million for Tokyo and around 100,000 to 200,000 for satellite cities. His plan also included ring roads, radial roads, a greenbelt, and a green network.

sarariman.....A salaried white-collar male typically employed by a large corporation.

satellite town.....An independent and self-contained town constructed around industrial or central cities to decentralize industry and the population. Satellite towns were the predecessor of the state-constructed new town.

superblock.....A legacy of Radburn, NJ, the superblock is self-contained block of dwellings organized around a central park and elementary school penetrated only by cul-de-sacs to encourage the separation of the vehicle and pedestrian.

Takayama Eika.....(1910-1999) A 1934 graduate of Tokyo Imperial University’s Department of Architecture, Takayama worked for Uchida Yoshizō on the plans for Daidō. Later, he established his own laboratory at Tokyo University and in 1962 founded the Department of Engineering. His studio was largely responsible for the master plans for Senri New Town as well as for the planning of its largest district center, Senri Chūō Sentā (Senri Central Center).

Tange Kenzō.....(1913-2005) A Pritzker Prize winning architect, Tange graduated from Tokyo Imperial University’s Department of Architecture in 1959 after studying under Kishida Hideto, Uchida Yoshizō, and Takayama Eika. (He enrolled in 1935.) A Metabolist, he is famous for several monumental projects, including the Hiroshima Peace Memorial Museum completed in 1955 and the Yoyogi National Gymnasium for the 1964 Summer Olympics. He also worked the Osaka World Exposition 1970 with his rival Nishiyama Uzō.

Tokyo City Improvement Ordinance.....(1888) Japan’s first, although largely failed, attempt to pass a building code, the TCIO became largely an infrastructural plan carried out over three phases: the development of water infrastructure (1888-1899), the implementation of road improvements (1900-1910), and the construction of sewerage infrastructure (1911-1918).

Uchida Yoshizō.....(1885-1972) A 1907 graduate of Tokyo Imperial University's Department of Architecture, Uchida, along with Sano Toshikata, founded the Rationalist School from which many Metabolists would later emerge. He was as important figure in the design and development of the Dōjunkai Apartments in the 1920s, where he designed the first apartment prototypes with Kishida Hidetō. In the late 1930s, he worked with a team of architects and planners at Tokyo Imperial University, including Takayama Eika, on the plan for Daidō. After the war, he continued to influence public housing policy and founded the City Planning Institute of Japan (CPIJ) in 1951.

Urban Buildings Law.....(1919) The nation's first building code drafted by Tokyo Imperial University professors, Sano Toshikata, Uchida Yoshizō, and Kasahara Toshiro.

Figures

Chapter 4 Figures



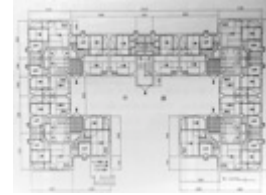
[Figure 4.1] An example apartment unit layout for the Edogawa apartments published in *Kenchiku sekai* in 1934. (Satō, *Dōjunkai no apātomento to sono jidai*, 54).



[Figure 4.2] Aerials of Edogawa Apartments (left) and [Figure 4.3] Daikanyama Apartments (right) by the Dōjunkai Foundation (Satō, *Dōjunkai no apātomento to sono jidai*, v, vi).



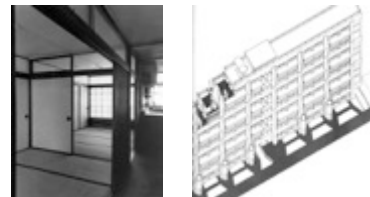
Figure [4.4] The Dōjunkai's Daikanyama Apartments block layout with [Figure 4.5] building type location (left) and two sample unit layouts (right). (Satō, *Dōjunkai no apātomento to sono jidai*, 106, 107).



[Figure 4.6] Plan for the Dōjunkai's Yanagijima Apartment buildings 4~6, showing the “コ” (ko) shaped layout. (Satō, *Dōjunkai no apātomento to sono jidai*, 132).

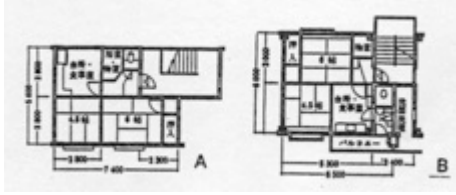


[Figure 4.7] Original plans for 1951 government subsidized public housing by the Yoshitake Laboratory. A north facing entry (left) and south facing entry (right) were both produced. (Suzuki, "51C" kazoku o ireru hako no sengo to genzai, 21).



[Figure 4.8] Interior of a unit at Harumi Apartments (left) and [Figure 4.9] axonometric drawn by Roger Sherwood (1978) of the Harumi Apartments by Ōtaka Masato and Maekawa Kunio (right) commissioned by the JHC in 1955 and completed in 1958.

(Reynolds, *Maekawa Kunio and the Emergence of Japanese Modernist Architecture*, 205; Sherwood, *Modern Housing Prototypes*, 127).



[Figure 4.10] Four variations of the 2DK apartment available through the JHC during the 1950s. “B” most closely resembles the 51C Apartment above. (Lai and Nakamura, “Sengo kukkōki to kōdo keizai seichōki no nihon jūtaku kōdan jūko no kenkyū,” 196).



[Figure 4.11] Examples of how green space is designed within *danchi* layouts from the JHC’s official history book published in 1981. The layout third from the left is the Tama Nagayama *danchi*. (Nihon jūtaku kōdan, *Nihon jūtaku kōdanshi*, 194).



[Figure 4.12] Diagram showing the national policy for housing provision in Japan (left) and [Figure 4.13] land readjustment (right) circa 1976. (The Japan Housing Corporation, *Japan Housing Corporation and its Achievements*, 12, 36)



[Figure 4.14] Standard floor layouts circa 1970 (left), and [Figure 4.15] sample 3DK and 4DK floor layouts from the JHC circa 1976 (right). (Nihon jūtaku kōdan. *Outline of the Japan Housing Corporation*, 29; The Japan Housing Corporation, *Japan Housing Corporation and its Achievements*, 30)



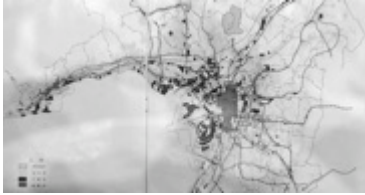
[Figure 4.16] Kawaguchi Shibazono danchi in Saitama (left) and [Figure 4.17] Aerial of Senboku New Town near Osaka.

Images of JHC *danchi* from the JHC’s official history book published in 1981. (Nihon jūtaku kōdan, *Nihon jūtaku kōdanshi*, front matter).



[Figure 4.18] An image of danchi life in a JHC pamphlet circa 1970 (left) and [Figure 4.19] “For a Pleasant Living at Danchi” showcasing daily activities at Tama New Town in a 1976 pamphlet by the JHC (right). (Nihon jūtaku kōdan. *Outline of the Japan Housing Corporation*, 17; The Japan Housing Corporation, *Japan Housing Corporation and its Achievements*, 3).

Chapter 5 Figures



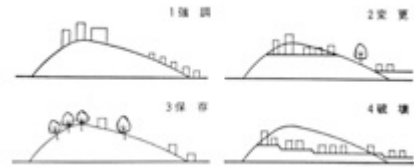
[Figure 5.1] Location for Senri New Town in the greater Osaka region (in black pin stripes, yellow refers to residential, blue to industrial, and red to commercial) from the 1962 *Senri kyūryō jūtaku chiku kaihatsu keikaku* [Senri Hills Residential District Development Plan] published by Osaka Prefecture.
(Senri New Town Information Center).



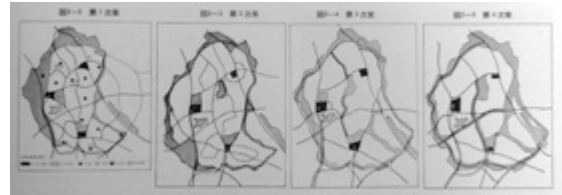
[Figure 5.2] Senri Hills in 1958, before the construction of Senri New Town (left) and [Figure 5.3] an aerial of Senri New Town circa 1965 (right).
(Senri New Town Information Center; “A Complete Look at Senri New Town,” *Japan Architect* 40, (05, 1965): 68)



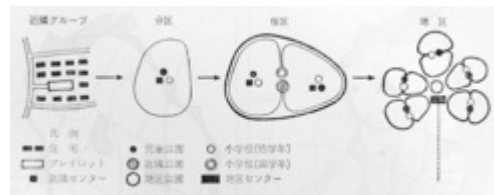
[Figure 5.4] Excavating the site for Senri New Town.
(Ōsakafu, *Senri nyūtaun no kensetsu*, front matter).



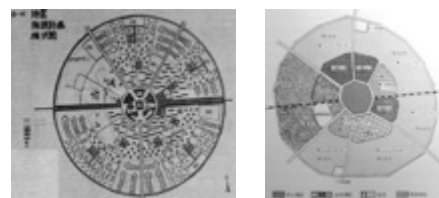
[Figure 5.5] Four methods for treating the landscape: 1, emphasize; 2, change; 3, preserve; 4, disrupt.
(Ōsakafu, *Senri nyūtaun no kensetsu*, 58).



[Figure 5.6] Four master plan drafts for Senri New Town produced by the Takayama Eika Laboratory starting in 1959.
(Ōsakafu, *Senri nyūtaun no kensetsu*, 19).



[Figure 5.7] Diagram show the concept for organizing Senri New Town. From left to right: Neighborhood groups, sub-districts, neighborhood units, and districts.
(Ōsakafu, *Senri nyūtaun no kensetsu*, 20).



[Figure 5.8] *Chiku* (district) schematic diagram of institutions (left), and

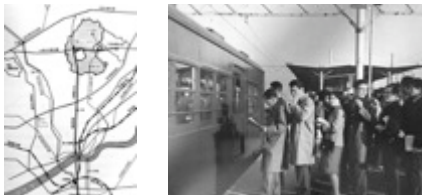
[Figure 5.9] Schematic diagram for the district show the civic center at the center of diagram surrounded by mid-rise and low-rise dwellings, a shopping center, and some high-rise dwellings. Single-family homes and shopping centers form the out layer but the western districts have been reserved for a park, institutions and the high school.
(Akiyama, “Modanizumu japan 1950’s → 1970’s,” 155; Ōsakafu, *Senri nyūtaun no kensetsu*, 45).



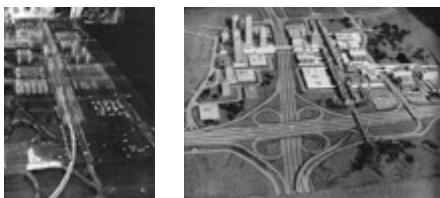
[Figure 5.10] Development Plan for Senri Hills Residential District.
(Ōsakafu, *Senri nyūtaun no kensetsu*, front matter).



[Figure 5.11] The building plans for three neighborhood units:
(A) Tsukumodai (I) Shin-Senri Kita Machi (J) Shin-Senri Higashi Machi
(Ōsakafu, *Senri nyūtaun no kensetsu*, 53).



[Figure 5.12] Diagram of Senri New Town's transportation links to Osaka City (left) and
[Figure 5.13] photograph of Senri New Town Residents on their morning commute (right).
(Ōsakafu, *Senri nyūtaun no kensetsu*, 117).



[Figure 5.14] Models for Senri Chūō Center prepared by the Takayama Eika Laboratory circa 1967.
("Urban Structure and Construction," *Japan Architect* no.137 (12, 1967): 13, 14).



[Figure 5.15] Takayama Eika Laboratory Aerial proposal for Senri Chūō Chiku Center circa 1969.
(Senri New Town Information Center).



[Figure 5.16] A proposal for the plaza by Nikken Sekkei circa 1969.
(Senri New Town Information Center).



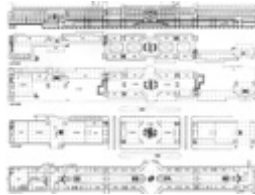
[Figure 5.17] Senri Chūō Center under construction circa 1970.
("Senrichūō chiku sentā, genjō, keikaku, jishshi," *Shinkenchiku* 45 no.7 (07, 1970): 188-189).



[Figure 5.18] Senri Chūō Chiku Center aerial photograph circa 1979.
(Senri New Town Information Center).



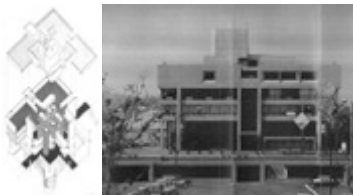
[Figure 5.19] The original shopping center in Senri Chūō Center circa 1970.
 (“Senrichūō chiku sentā senmontengai,” *Shinkenchiku* 45 no.7 (07, 1970): 164, 165).



[Figure 5.20] Plans for the original Senri Chūō Pal building circa 1970.
 (“Senrichūō chiku sentā senmontengai,” *Shinkenchiku* 45 no.7 (07, 1970): 170).



[Figure 5.21] Senri Chūō Center circa 1970.
 (“Senrichūō chiku sentā senmontengai,” *Shinkenchiku* 45 no.7 (07, 1970): 166-167).



[Figure 5.22] Exploded Axonometric of the Senri Chūō District Center Building by Fumihiko Maki & Associates circa 1968 (right) and the Senri Chūō District Center Building by Fumihiko Maki & Associates circa 1970 (left).
 (“Senri sentā biru keikakuan,” *Kenchiku Bunka* no.261 (07, 1968): 77; Senrichūō chiku sentā biru,” *Shinkenchiku* 45 no.7 (07, 1970): 172-173).



[Figure 5.23] Perspective the Minami-Senri Chiku Center.
 (Senri New Town Information Center).



[Figure 5.24] Plan for Minami-Senri Chiku Center circa 1964.
 (“The Senri New Town Neighborhood Center.” *Japan Architect* 39, (12, 1964): 36).



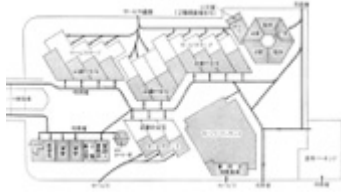
[Figure 5.25] The Senri Newtown South Area Center Building by Murano & Mori, circa 1964.
 (“The Senri New Town Neighborhood Center.” *Japan Architect* 39, (12, 1964): 37).



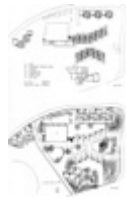
[Figure 5.26] A 1965 aerial perspective drawing for Kita-Senri Chiku Center.
 (Senri New Town Information Center).



[Figure 5.27] Perspective of Satakedai neighborhood shopping center circa 1962.
 (Senri New Town Information Center).



[Figure 5.28] Building placement plan for Takemidai & Sakemidai Neighborhood Shopping Center.
(Ōsakafu, *Senri nyūtaun no kensetsu*, 159).



[Figure 5.29] Plans for Senriyama Neighborhood Shopping Center by Junzō Sakakura circa 1964.
("The Senri New Town Neighborhood Center." *Japan Architect* 39, (12, 1964): 35).



[Figure 5.30] Site for the 1970 World Exposition north of Senri New Town
(Senri New Town Information Center).



[Figure 5.31] Residents relaxing in the pond at South Senri Park in 1966 and [Figure 5.32] Plan for South Senri Park.
(Senri New Town Information Center; Ōsakafu, *Senri nyūtaun no kensetsu*, 174).



[Figure 5.33] Residents at the pool at North Senri Park in 1967.
(Senri New Town Information Center).



[Figure 5.34] Takemidai play lot.
(Senri New Town Information Center).



[Figure 4.35] Danchi life in Senri New Town
(Ōsakafu, *Senri nyūtaun no kensetsu*, front matter).



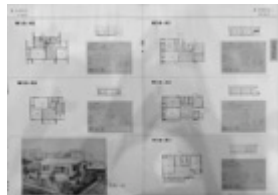
[Figure 5.36] Danchi life in Senri New Town.
(Ōsakafu, *Senri nyūtaun no kensetsu*, front matter).



[Figure 5.37] Sample floor plans for *kōei jūtaku* (government subsidized public housing). (Ōsakafu, *Senri nyūtaun no kensetsu*, 77).



[Figure 5.38] Sample floor plans for *kōdan jūtaku* (JHC public housing). The left grouping is mid-rise rented units, the upper right unit a high-rise rented unit, and the lower right unit is for sale. (Ōsakafu, *Senri nyūtaun no kensetsu*, 79).



[Figure 5.39] Sample page from a catalog featuring single-family home options as Senri New Town circa 1963. (*Senri kyūryō jūtaku chiku: bunjō jūtaku heimen zushū* [Senri Hills Residential District: Collection of Residential Floor Plans for Sale]. Osaka: Ōsakafu kigyōkyoku, 1963. Senri New Town Information Center).

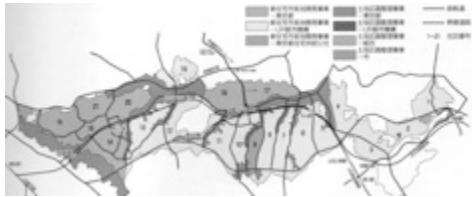


[Figure 4.40] Sample pages from *Senri nyūtaun: hito to seikatsu* [Senri New Town: People and Lifestyle] published by Toyonaka City in 1973. (Senri New Town Information Center)

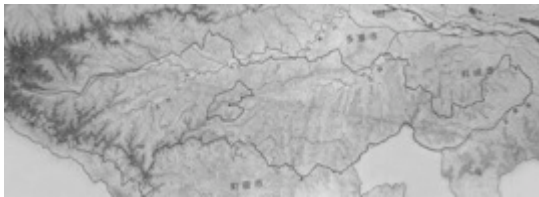
Chapter 6 Figures



[Figure 6.1] Location of Tama New Town in the Tokyo region.
(Toshi saisei kikō, “Tama nyūtaun no jūtaku kensetsu shiryō shū 2005,” 3).



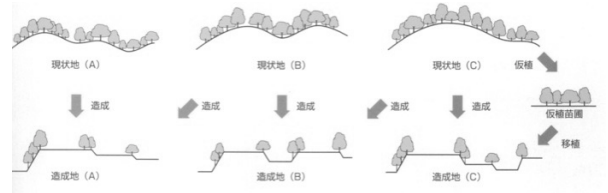
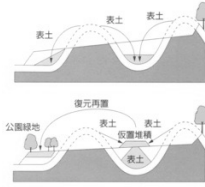
[Figure 6.2] Land ownership of Tama New Town.
(Toshi saisei kikō, “Tama nyūtaun no jūtaku kensetsu shiryō shū 2005,” 3).



[Figure 6.3] Topographical map of the Tama Hills region.
(UR toshi kikō. *Tama New Town: Since 1965*, 5).



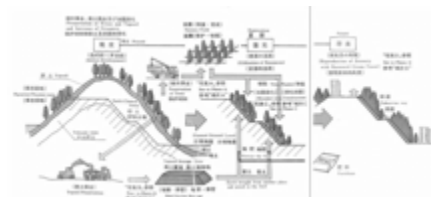
[Figure 6.4] The natural landscape of Tama Hills before development on Tama New Town began.
(Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 5).



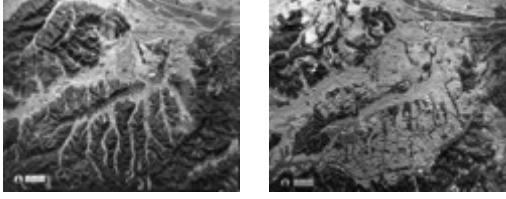
[Figure 6.5] Methods of preparing the terrain for development.
(Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 88).



[Figure 6.6] The construction of *danchi* in Suwa and Nagayama neighborhood units (left) in Tama New Town circa 1976, and [Figure 6.7] Kaitori and Toyogaoka (right) circa 1980.
(The Japan Housing Corporation, *Japan Housing Corporation and its Achievements*, 2; Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 34).



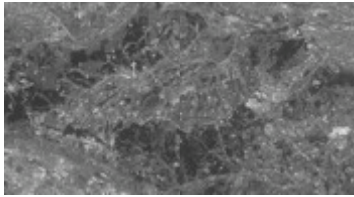
[Figure 6.8] Diagram of the method of preserving trees and topsoil before construction.
(Minami Tama Development Office, *Tama New Town at a Glance*, 18-19).



[Figure 6.9] Models showing the before and after condition of the site of Tama New Town. (Parthenon Tama Museum).



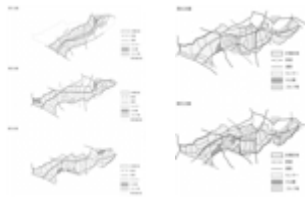
[Figure 6.13] Ōtaka Masato's 1964-1966 proposal for a Nature and Topography Plan. (Minohara, Matsukawa, and Nakajima. *Kenchika ōtaka masato no shigoto*, 59)



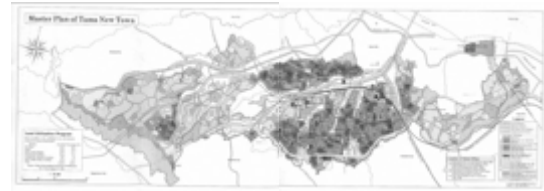
[Figure 6.10] Satellite photograph of Tama New Town. (UR toshi kikō. *Tama New Town: Since 1965*, back matter).



[Figure 6.14] Ōtaka Masato's 1964-1966 proposal for a Nature and Topography Plan for the neighborhood units of Kaitori, Toyogaoka, and Ochiai. (Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 21).



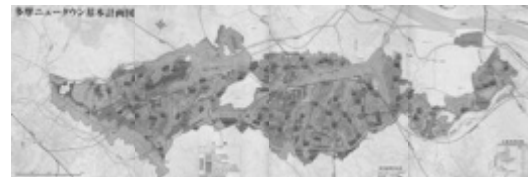
[Figure 6.11] First through fifth drafts for the Tama New Town master plan prepared by Konno Hiroshi and his team. (Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 17-18).



[Figure 6.15] Master plan for Tama New Town circa 1982. (*Tama New Town*. TMG, HUDC, TMHS, center fold).



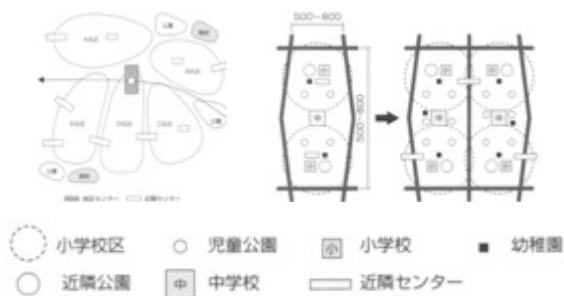
[Figure 6.12] Sixth draft/1965 Development plan for Tama New Town and the surrounding region. (Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 20).



[Figure 6.16] Master plan for Tama New Town circa 2006. (UR toshi kikō. *Tama New Town: Since 1965*, back matter).



[Figure 6.17] Detail of the master plan for Tama New Town focusing on the Tama City region (showing Suwa, Nagayama, Toyogaoka, Ochiai, Kaitori, and Tama Center), circa 2006. The grey portion is the land readjustment area, the green is the green network, the brown is educational facilities, the pink is district centers, and the orange is housing estates.
(UR toshi kikō. *Tama New Town: Since 1965*, back matter).



[Figure 6.18] Diagram showing the organization of neighborhood units around a district center and rail station, with neighborhood shopping centers, parks, and schools near the neighborhood units (left), and diagram showing the composition of “soft cell” neighborhood units within a “hard shell” of infrastructure.
(Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 26).



[Figure 6.19] Diagrams showing the evolution of the green network and pedestrian pathways as neighborhoods units were built over time.
(Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 90).



[Figure 6.20] Model photos of Toyo Ito's Humax Nagayama Amusement Complex in Nagayama District Center circa 1991.
(“Nagayama amyūzumento compurekkusu,” *Kenchiku bunka* 46, no.542 (12, 1991): 144, 146).



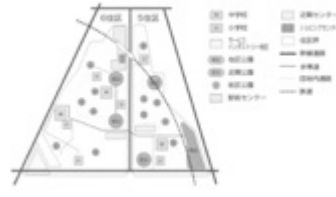
[Figure 6.21] Facilities plan for Tama Center that details the various commercial and civic facilities.
(Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 44).



[Figure 6.22] Aerial and diagram of the pedestrian deck at Tama Center designed by Ōtaka Masato.
(Minohara, Matsukawa, and Nakajima. *Kenchika ōtaka masato no shigoto*, 168-169)



[Figure 6.23] Aerial of Tama Center.
(Kōekizaidan hōjin, *Sora kara machi wo miru*, 27).



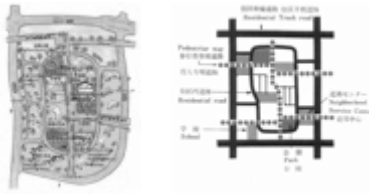
[Figure 6.27] Diagram of the Nagayama and Suwa neighborhood units showing placement of parks, schools, pedestrian pathways and shopping centers.
(Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 30).



[Figure 6.24] Aerial of pedestrian deck at Minami-Ōsawa District Center designed by Ōtaka Masato (left), proposal for Minami Ōsawa District Center circa 1996.
(Minohara, Matsukawa, and Nakajima. *Kenchika ōtaka masato no shigoto*, 171; Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 66)



[Figure 6.28] Block layout for part of the Nagayama neighborhood unit (left) and Suwa neighborhood unit (right).
(*Tama nyūtaun ni okeru jūkankyō no keisei to kyojū*, Tokyo Tama West Development Headquarters, 72-73).



[Figure 6.25] The structure of the neighborhood unit.
(Minami Tama Development Office, *Tama New Town at a Glance*, 20).



[Figure 6.29] Master plans for Atago (top) and Suwa and Nagayama (bottom) neighborhoods circa 1971?
(*Tama New Town*. Tokyo Metropolitan Government, 7).



[Figure 6.26] Neighborhood shopping centers at Nagayama circa 1971? (left) and at Toyogaoka circa 1982? (right).
(*Tama New Town*. Tokyo Metropolitan Government, 4; *Tama New Town*. TMG, HUDC, TMHS, 7).



[Figure 6.31] Nagayama 4-chome photographed in 1970 and again in 2007.
(Parthenon Tama Museum)



[Figure 6.32] Site plan for Suwa Townhouses (left) and aerial photograph (right). (“Jukusei suru shūgou jūtaku,” *Jūtaku Kenchiku* 8, no.440 (08, 1913): 9; Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 30).



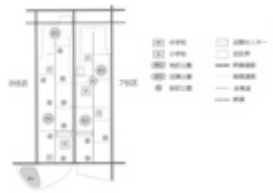
[Figure 6.36] Aerial of Tsurumaki and Ochiai that shows the breakdown of homogenous *danchi*. (Kōekizaidan hōjin, *Sora kara machi wo miru*, 32).



[Figure 6.33] Images of Tama New Town circa 1981. (Nihon jūtaku kōdan, *Nihon jūtaku kōdanshi*, front matter).



[Figure 6.37] Sample floor plan for *kōei jūtaku* in (government subsidized public housing) Tama New Town in 1975. (*Tama nyūtaun ni okeru jūkankyō no keisei to kyojū*, Tokyo Tama West Development Headquarters, 9).



[Figure 6.34] Diagram of the Kaitory and Toyogaoka neighborhood units showing placement of parks, schools, pedestrian pathways and shopping centers. (Jūtaku toshi seibi kōdan, *Tama nyūtaun jigyō gaiyō*, 34).



[Figure 6.38] Sample floor plans for *kōdan jūtaku* (JHC public housing) in Tama New Town in 1975. (*Tama nyūtaun ni okeru jūkankyō no keisei to kyojū*, Tokyo Tama West Development Headquarters, 12).



[Figure 6.35] Aerial of Toyogaoka from the south. (Kōekizaidan hōjin, *Sora kara machi wo miru*, 20).



[Figure 6.39] A pamphlet advertising the lifestyle of Tama New Town by the JHC. (*Tama New Town*, Tokyo Metropolitan Government, 1-2)

Bibliography

Primary Sources

- Akiyama, Tetsukazu. "Modanizumu jappan 1950's → 1970's -8- Senri nyūtaun: Hajimete no jikken toshi" [Modernism Japan 1950's → 1970's -8- Senri New Town: First Experimental City]. *Kenchiku Bunka* no.563 (09, 1993): 151-158.
- "Belbu Nagayama," *Home>Works>Office*, Sakakura Associates, Inc. Accessed April, 2015. <http://www.sakakura.co.jp/info/works/office/>.
- COM keikaku kenkyū shitsu. *Senrinyūtaun: hito to seikatsu* [Senri New Town: People and Lifestyle]. Tōyonakashi: Zaidan hōjin ōsakafu senri sentā, 1973. Senri New Town Information Center.
- Fujimoto, Shōya. "Toshikeikaku no shutaisei no kakuritsu no tame ni: tama nyūtaun no sekkei wo tōshite [For the Establishment of Main Concepts of City Planning: through the Design of Tama New Town]." *Shinkenchiku* 43, no. 6 (06, 1968): 131-134.
- "Furusato mappu: Tamashi zenzu [Tama City Guide]." Shikaku seisakubu kōhō kōchōka. March, 2012.
- Hachioji tōto chiku kōen mappu* [Hachioji East District Park Map]. Ippan shadanhōjin smāto, April, 2014.
- Hamaguchi, Ryūichi. "Image of a Family as Reflected in Room Arrangement." *Shinkenchiku* 31, no.9 (1956): 56-58.
- Hani, Susumu, Eiji Okada, and Tōru Takemitsu. *Kanojo to kare* [She and He]. 1963. Brooklyn, NY: New York Film Annex. Videorecording.
- Jūtaku toshi seibi kōdan minami tama kaihatsukyoku. *Tama nyūtaun jigyo gaiyo* [Tama New Town Project Summary]. Jūtaku toshi seibi kōdan minami tama kaihatsukyoku, 1996.
- Jūtaku toshi seibi kōdan. *Housing of the Housing and Urban Development Corporation (HUDC) in Tama New Town: Model Town, Quality Living*. Tokyo: Housing and Urban Development Corporation, 1985.
- Kai, Jun. *Tama New Town at a Glance: 21seiki he mukatte habataku, Tama nyūtaun* [Tama New Town, Flying Towards the 21st Century]. Minami Tama New Town Development Office T.M.G., 1988.
- "Kaisha annai = Company Profile." *Yomiuri bunka sentā*. Yomiuri Bunka Center. Accessed February, 2015. <http://www.yomiuri-bc.co.jp/info/index.php>.
- Kokyō, Yasuo, Manimura Kenjirō, Kawakami Masao, Fukuya Takashi, Morimune Takashi, Konno Masao, and Tabata Hiroshi. "Senrichūō chiku sentaa, genjō, keikaku, jisshi [Senri Center Region, Present Condition, Plan, Implementation]." *Shinkenchiku* 45 no.7 (07, 1970): 188-198.
- Kuhabara, Tatsuo. "Nagayama amyūzumento conpurekkusu [New Project Amusement Complex in Nagayama]." *Kenchiku bunka* 46, no.542 (12, 1991): 140-151
- Kurashi to. kodomo* [Living and Children]. Toshi saisei kikō, 2014.
- Kurashi to. komyuniti* [Living and Community]. Toshi saisei kikō, 2014.
- Kurashi to. shoten* [Living and Shops]. Toshi saisei kikō, 2014.
- Kurashi to. supotsu* [Living and Sports]. Toshi saisei kikō, 2014.

- Madori no eraberu: Ōsakafu Senri kyūryō bunjō jūtaku* [Chose a Layout: Osaka, Senri Hills Dwellings for Sale]. Osaka: Ōsakafu kigyōkyoku kanrika, 1963. Senri New Town Information Center.
- Machi • Sumai to kankyō 2013* [Environment of the City and of Dwelling]. Toshi saisei kikō. August, 2013.
- Maki & Associates. “Senri sentā biru keikakuan [Senri Center Building Blueprint].” *Kenchiku Bunka* no.261 (07, 1968): 76-79.
- Maki sōgō keikaku jimusho. “Senrichūō chiku sentā biru [Senri Center Region Central Building].” *Shinkenichiku* 45 no.7 (07, 1970): 171-184.
- “Minami-Ōsawa Housing Project in Tama New-Town by Metropolitan Housing Bureau with Maki & Associates.” *Kenchiku Bunka* 39, no.455 (09, 1984): 82-89.
- Naimusho chihokkyoku yushi, Japan. *Den'en toshi*. Tokyo: Hakubunkan, 1907.
- Nakamura, Akira. “Shakai kukushi hōjin tama fukushikai: koguma hoikuen 1973 [Social Welfare Corporation, Tama Welfare Society, Koguma Childcare 1973].” *Shinkenichiku* 52 no.8 (07, 1977): 208-209, 215.
- Nihon jūtaku kōdan. *Nihon jūtaku kōdanshi* [History of the Japan Housing Corporation]. Tokyo: Nihon jūtaku kōdan, 1981.
- Nikken sekkei kōmu Osaka jimusho. “Senrichūō chiku sentā senmontengai [Senri Center Region Central Specialty Shop Street].” *Shinkenichiku* 45 no.7 (07, 1970): 163-170.
- Nikken sekkei kōmu Osaka jimusho. “Enerugī sentā: Senri chīki reidanbō enerugī puranto conpyuutā sentā [Energy Center: Senri Regional Air-conditioning Energy Plant Computer Center].” *Shinkenichiku* 45 no.7 (07, 1970): 185-187.
- Nishiyama, Uzō. “An Approach to Planning: Judge’s Remarks.” *Japan Architect* 137 (12, 1967): 62-66.
- OPH Post-Rehabilitation Rental Housing Pamphlet*, 2008, 15-17, Senri New Town Information Center.
- Ōsakafu (Japan: Prefecture). *Senri nyūtaun no kensetsu* [The Construction of Senri New Town]. Ōsaka: Osaka Prefectural Government, 1970.
- Senri kyūryō jūtaku chiku: bunjō jūtaku heimen zushū* [Senri Hills Residential District: Collection of Residential Floor Plans for Sale]. Osaka: Ōsakafu kigyōkyoku, 1963. Senri New Town Information Center.
- Senri kyūryō jūtaku chiku kaihatsu keikaku* [Senri Hills Residential District Development Plan]. Osaka: Ōsakafu kigyōkyoku, 1962. Senri New Town.
- Senri midori no sanpō michi ni dekakeyō* [Let’s go on Senri’s Green Walking Paths]. Ōsakafu, March, 2012.
- Senri nyūtaun jōhōkan: riyō no goannai* [Senri New Town Information Center: Usage Guide]. Suitashi, April, 2012.
- Senri nyūtaun machibiraki 50-nen jigyo jikkō īnkai. *Senri Newtown Map: Senri nyūtaun mappu*. Senri nyūtaun saisei renraku kyōgikai. March, 2013.
- Senri nyūtaun puraza: riyō no go annai* [Senri New Town Plaza: Usage Guide]. Suita City.
- Shimin īnkai. ‘07 EXPO ’70—*Watashi to panpaku* [’70 EXPO ’70—The World Fair and Me]. Suita City Museum, October, 2007.
- Shimin īnkai. *Nyūtaun hanseiki ten—Senri hatsu • DREAM—* [New Town Half-Century Exhibition—The Foundation of Senri • DREAM—]. Suita City Museum, October, 2012.

- Shimin Inkai. *Senri nyūtaun ten* [Senri New Town Exhibition]. Suita City Museum, April, 2006.
- Shinkyō toshi kensetsu keikaku yōto chiiki haibun narabini jigyō daiichiji shikō kuikizu: shukushaku nimanbun no ichi* [map]. 1932. 1:20,000. "American Memory." Library of Congress Geography and Map Division, Washington, D.C. Accessed May, 2015. <http://hdl.loc.gov/loc.gmd/g7824cm.gct00267>.
- Suburu, Kazuo, and Takata Teruo. "Senri inokotani A-danchi: 2-dankai kyōkyū hōshiji ni yoru shūgō jūtaku no tenkai [Senri Inokotani A-Housing Block: Apartment House Expansion via 2-Level Supply Method]." *Kenchiku Bunka* no.522 (04, 1990): 138-147
- Suita City, and Toyonaka City. *Senri nyūtaun no shiryōshū: jinkō suī nado* [Senri New Town Datasheets: Population Change, etc...] Suita City and Toyonaka City: Senri New Town, 2013.
- "Tama gāden hausu" [Tama Garden House]." *Shinkenichiku* 52, no.3 (March 1977): 191-194.
- Tama Metropolitan Government. *Tama New Town*. Tokyo Metropolitan Government, 1988.
- Tama nyūtaun eria: dōkō annai bukken gaido* [Tama New Town Area: Travel Information Article Guide]. Toshi seibi kikō, July, 2014.
- Tama nyūtaun ni okeru jūkankyō no keisei to kyōjū-keitai ni kansuru chōsa kenkyū hōkokusho* [Survey Research Report Concerning the Formation and Residence Form of the Living Environment in Tama New Town]. Tokyo: Tokyo West Tama Development Headquarters, 1975.
- "Tama nyūtaun no jūtaku kensetsu shiryō shū 2005 [Tama New Town Dwelling Architecture Document Collection]." Toshi saisei kikō, 2006.
- Tama nyūtaun shiki no sozoro aruki* [The Four Seasons from Tama-Newtown]. Toshi saisei kikō.
- Tama shiyakusho. "Tamashi toshi keikaku yōto chīki chikuzu [Tama City Urban Planning Regional Use District Map]." March, 2009.
- "Toei tama nyūtaun minami-ōsawa danchi [Metropolitan Tama New Town Minami-Ōsawa Housing Block]." *Shinkenichiku* 59, no.10 (09, 1984): 190-197.
- "Tokushū: Ano hi mo ima mo akogare danchi life [Special: That day, Today, the Yearning of Danchi Life]." *UR Press*, vol.38 (2014).
- Tama New Town*. Tokyo Metropolitan Government. 1971?
- Tama New Town*. Tokyo Metropolitan Government: Housing and Urban Development Corporation, Tokyo Metropolitan Housing Supply Corp., 1982?
- "UR Sumai gaido: Tokyoto shibuhan [UR Living Guide: Tokyo City Subdivision Edition]." Toshi saisei kikō, July, 2014.
- UR toshi kikō. *Tama New Town: Since 1965*. UR City Organization. Tama, Tokyo: Toshi saisei kikō, April 2008.
- Watanabe, Keichi. "Daichi seimei senri kyōiku sentā" [Number One Life Senri Educational Center]. *Shinkenichiku* 57, no.7 (07, 1982): 212-215.
- Watashi no senri nyūtaun* [My Senri New Town]. Suitashi Toyonakashishi Senri nyūtaun renraku kaigi, July, 2012.
- "A Complete Look at Senri New Town [Osaka Pref., Japan]." *Japan Architect* 40, (05, 1965): 68-79.
- Hoshino, Ikumi. "Apartment Life in Japan." *Journal of Marriage and Family* 26, no.3 (08, 1964): 312-317. Accessed January 27, 2015. <http://www.jstor.org/stable/349462>.

- Ministry of Internal Affairs and Communications: Statistic Bureau. "2-5 Population by Prefecture and Sex (1884--2009)." *Chapter 2 Population and Households*. Statistics Bureau (1996). Accessed April, 2015. <http://www.stat.go.jp/data/chouki/zuhyou/02-05.xls>.
- Ministry of Internal Affairs and Communications: Statistic Bureau. "2-7 Population, Population Density, Population of Densely Inhabited Districts and Area by Prefecture, All Shi and All Gun (1898--2005)." *Chapter 2 Population and Households*. Statistics Bureau (1996). Accessed April, 2015. <http://www.stat.go.jp/data/chouki/zuhyou/02-07.xls>.
- Ministry of Internal Affairs and Communications: Statistic Bureau. "2-37-b Intra-prefectural Migrants, In-migrants from and Out-migrants to Other Prefectures and Net Migration Rate, by Prefectures and Sex (1954--2004)." *Chapter 2 Population and Households*. Statistics Bureau (1996). Accessed April, 2015. <http://www.stat.go.jp/data/chouki/zuhyou/02-37-b.xls>.
- Ministry of Internal Affairs and Communications: Statistic Bureau. "12-10 Motor Vehicles Owned by Kind (F.Y.1936--2004)" and "12-2-a Domestic Passenger Transportation by Mode of Transportation (F.Y.1950--2004)." *Chapter 21 Housing*. Statistics Bureau (1996). Accessed March, 2015. <http://www.stat.go.jp/data/chouki/zuhyou/21-10.xls>.
- Ministry of Internal Affairs and Communications: Statistic Bureau. "21-10 Private Households and Household Members, Rooms per Household and Area of Floor Space per Household, by Kind of Residence and Tenure of Dwelling (1960--2005)." *Chapter 21 Housing*. Accessed February, 2015. <http://www.stat.go.jp/english/data/chouki/21.htm>.
- Nihon jūtaku kōdan. *Outline of the Japan Housing Corporation*. Tokyo: Japan Housing Corporation, 1970.
- Ōsakafu (Japan: Prefecture). *Regional and City Planning*. Ōsaka: 1966.
- Ōsakafu (Japan: Prefecture). *The Project of Senri: Residential New Town*. Ōsaka: Public Enterprise Bureau, Osaka Prefectural Government, 1966.
- Seminar on Planning for Urban and Regional Development, Including Metropolitan Areas, Nagoya, October 10-20, 1966. *Planning for urban and regional development in Asia and the Far East*. New York: United Nations, 1971.
- Takayama Laboratory, Tokyo University. "Urban Structure and Construction: The Senri Newtown Central District Master Plan." *Japan Architect* no.137 (12, 1967): 13-16.
- The Japan Housing Corporation. *Japan Housing Corporation and its Achievements*. Tokyo: Japan Housing Corp, 1976.
- "The Senri New Town Central District Center." *Japan Architect* 45, (10, 1970): 37-64.
- "The Senri New Town Neighborhood Center." *Japan Architect* 39, (12, 1964): 32-42.

Secondary Sources

- Alden, Jeremy D., Moriaki Hirohara and Hirofumi Abe. "The Impact of Recent Urbanisation on Inner City Development in Japan." *The Town Planning Review* 59, no.4 (10, 1988): 365-381. Accessed June, 2015. <http://www.jstor.org/stable/40111721>.
- Amati, Marco. *Urban Green Belts in the Twenty-first Century*. Aldershot, England: Ashgate, *eBook Collection (EBSCOhost)*, EBSCOhost, 2008. Accessed April 19, 2015.

- Applbaum, Kalman. "The Endurance Of Neighborhood Associations In A Japanese Commuter City." *The Institute, Inc.: Urban Anthropology and Studies of Cultural Systems and World Economic Development* 25, no.1 (Spring, 1996): 1-39. Accessed February 8, 2015. <http://www.jstor.org/stable/40553292>.
- "Asia for Educators: 600 to 1000: Expanding Zones of Exchange and Encounter." *Asia for Educators, Columbia University*. Last modified in 2009. Accessed in January 2015, http://afe.easia.columbia.edu/tps/600ce_jp.htm#nara.
- Bahga, Sarbjit and Surinder Bahga. *Le Corbusier and Pierre Jeanneret: Footprints on the Sands of Indian Architecture*. New Delhi: Galgotia Publishing Company, 2000.
- Ben-Joseph, Eran. "Changing the Residential Street Scene: Adapting the Shared Street (Woonerf) Concept to the Suburban Environment." *APA Journal* (1995): 504-515.
- "Bombings of Tokyo and Other Cities," *World War II Database*, Lava Development, LLC, 2004-1015, accessed March, 2015, http://ww2db.com/battle_spec.php?battle_id=217.
- Christensen, Carol A. *The American Garden City and the New Towns Movement*. Ann Arbor, Mich: UMI Research Press, 1986.
- Cybriwsky, Roman. *Tokyo: The Changing Profile of an Urban Giant*. Boston, Mass: G.K. Hall, 1991.
- Ducom, Estelle. "Tama New Town, West of Tokyo: Analysis of a Shrinking Suburb." Paper, University of Tsukuba, 2008. Accessed September, 2014. <https://halshs.archives-ouvertes.fr/halshs-00203107>.
- French, Hilary. *Key Urban Housing of the Twentieth Century: Plans, Sections, and Elevations*. New York: W.W.Norton, 2008.
- Fujimori, Terunobu. "Ie no chūshin ha mizumawari: LDK ga kaeta nihon no jūtaku [Running Water is the Center of the Home: Japanese Dwellings Transformed by the LDK]." *Mizu no bunka*, no. 31, (02, 2009): 4-9.
- George, Timothy S. *Minamata: Pollution and the Struggle for Democracy in Postwar Japan*. Cambridge Mass: Harvard University Asia Center, 2001.
- Goldberg, Paul M. "Housing Development in Japan." Working paper, Massachusetts Institute of Technology, August 1971.
- Gordon, Andrew, ed. *Postwar Japan as History*. Berkeley: University of California Press, 1993.
- Hanley, Susan B. "Tokugawa Society: Material Culture, Standard of Living, and Life-styles." In *The Cambridge History of Japan Volume 4: Early Modern Japan*, edited by John Whitney Hall, 660-705. Cambridge: Cambridge University Press, 1991. doi: 10.1017/CHOL9780521223553.014.
- Hein, Carola, Jeffry M. Diefendorf, and Yorifusa Ishida. *Rebuilding Urban Japan after 1945*. Houndmills, Basingstoke, Hampshire: Palgrave Macmillan, 2003.
- Hein, Carola. "Machi: Neighborhood and Small Town—The Foundation for Urban Transformation in Japan." *Journal of Urban History* 35, no.1 (11, 2008): 75-107.
- Hein, Carola. "Nishiyama Uzō to nihon ni okeru sai'yō riron no denpa [Nishiyama Uzō and the Spread of Western Concepts in Japan]." *10 + 1: Ten Plus One*, no.20 (2000): 143-148.
- Henderson, Susan R. *Building Culture: Ernst May and the New Frankfurt Initiative, 1926-1931*. Studies in Modern European History 64. New York: Peter Lang, 2013.
- Hertzen, Heikki von, and Paul D. Spreiregen. *Building a New Town; Finland's New Garden City, Tapiola*. Cambridge, Mass: MIT Press, 1971.

- Howard, Ebenezer. *Garden Cities of Tomorrow*. London: Swan Sonnenschein & Co., Ltd., 1902.
- Inagaki, Eizō. *Nihon no kindai kenchiku* [Modern Architecture of Japan]. Tokyo: Chuokōrin bijutsu shuppan, 2009.
- Isozaki, Arata and Naohiko Hino. “Kishida Hidetō/Maekawa Kunio/Tange Kenzō--nihon ni okeru kenchiku modanizumu juyō wo megutte, [Hidetō Kishida, Kunio Maekawa and Kenzo Tange: On Adoption of Modernism-Architecture in Japan]. *10 + 1: Ten Plus One DATABASE*. Accessed April 25, 2015. <http://db.10plus1.jp/backnumber/article/articleid/679/>.
- Iwao, Sumiko. *The Japanese Woman: Traditional Image & Changing Reality*. New York: The Free Press, Macmillan, 1993.
- Johnson, Ben. “International News.” *National Real Estate Investor*. January 1, 2000. <http://nreionline.com/mag/international-news-32>.
- Johnson, Chalmers. *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925-1975*. Stanford, Calif: Stanford University Press, 1982.
- “Jukusei suru shūgou jūtaku: shūjū no honshitsu wo tō [Matured Collective Housing: Questioning the Essence of Dwelling].” *Jūtaku Kenchiku* 8, no.440 (08, 2013): 4-19.
- Kaneko, Atsuh, ed. *Tama nyūtaun kaihatsu no kiseki: “kyodai no jitsugen toshi” no tanjō to henyō* [The Locus of Tama New Town Development: the Birth and Changes of an “Enormous Experimental City]. Tama, Tokyo: Parutenon Tama Kōekizaidan hōjin tamashi bunka shinkō saidan, 1998.
- Kaneko, Atsushi. *Tama nyūtaun ni okeru katari to sono dansō* [Issues with the Narrative of Tama New Town]. *Koushou Bungei Kenkyuu* (2012): 180-184.
- Kaneko, Atsushi. *Tama nyūtaun to iu kurashi no jitsugen* [Experiment in Life in Tama New Town]. *Kokuritsu rekishi minzoku hakubutsukan kenkyū hōkoku* 171 (2011-12): 83-106.
- Kano, Hiroyoshi, ed. *Growing Metropolitan Suburbia: A Comparative Sociological Study on Tokyo and Jakarta*. Jakarta: Yayasan Obor Indonesia, 2004.
- Karan, Pradyumna P., and Kristin Eileen Stapleton. *The Japanese City = Nihon no toshi*. Lexington, Ky: University Press of Kentucky, 1997.
- Katayose, Toshihide. *Jikken toshi: senri nyūtaun wa ikani tsukurareta ka* [Experimental City: How Senri New Town was Built]. Tokyo: Shakai Shisōsha, 1981.
- Kelly, William W. “Rationalization and Nostalgia: Cultural Dynamics of New Middle-Class Japan.” *American Ethnologist* 13, no.4 (11, 1986): 603-618. Accessed January 20, 2015. <http://www.jstor.org/stable/644456>.
- Kinoshita, Takeshi and Tetsuo Nemoto. “Tama Nyūtaun Shizen Chikeian: Keian wo Meguru Shokankei no Dinamikusu [Proposal for Tama New Town Geographical Features: Dynamics of Geographical Relationships].” *10 + 1: Ten Plus One* 42 (2006): 124-127.
- Kinoshita, Yōko. *Ie danchi machi: Kōdan jūtaku sekkei keikakushi* [House, Apartments, City: A History of Public Housing Design Schemes]. Edited by Makoto Ueda. Tokyo: Sumai no toshokan shuppankyoku, 2014.
- Kitagawa, Keiko. *Dainingu kitchin wa kōshite tanjō shita: jōsei kenchikuka miho hamaguchi ga mezashita mono* [The Process of the Birth of the Dining-Kitchen: What Miho Hamaguchi, the First Female Architect, Aimed at]. Tokyo: Giho-do Shuppan, 2002.
- Kiuchi, Shinzo, and Noboru Inōchi. “New Towns in Japan.” *Geoforum* 7, (01, 1976): 1-12.

- Kōekizaidan hōjin tamashi bunka shinkō saidan, ed. *Sora kara machi wo miru: Parutenon tama shūzō shashin shiryōshū* [Seeing the City from the Sky: Parthenon Tama Photographic Data Collection]. Tama, Tokyo: Kōekizaidan hōjin tamashi bunka shinkō saidan, 2014.
- Kōjirō, Naoki and Felicia G. Bock. "The Nara State." In *The Cambridge History of Japan Volume 1: Ancient Japan*, edited by Delmer M. Brown, 221-267. Cambridge: Cambridge University Press, 1993. Doi: 10.1017/CHOL9780521223522.
- Konno, Hiroshi. "Urban Development and Road Building: A Brief History of Tama New Town." *Wheel Extended* no.73, (1990): 9-17.
- Kuan, Seng and Yukio Lippit. *Kenzo Tange: Architecture for the World*. Baden : London: Lars Müller ; Springer, 2012.
- Kuan, Seng. *Tange Kenzo's Architecture in Three Keys: As Building, as Art, and as the City*. Ph.D. Dissertation, Harvard University, 2011.
- "Kurashi no sutandādo wo rinobēshon kara kangaeru, MUJIXUR danchi rinobēshon purojekuto: sekkei muji netto + toshi saisei kikō kanshū open A [Conclusions from Renovations of Living Standards, MUJIXUR Housing Block Renovation Project: MUJIXUR Plan + City Regeneration System Supervision Open A]." *Shinkenichiku*, no.2 (02, 2013): 76-83.
- Lai, Haihong and Keizou Nakamura. "Sengo kukkōki to kōdo keizai seichōki no nihon jūtaku kōdan jūko no kenkyū – 1945nen ~ 1973nen made no madori kōsei no bunseki [Study on the Public Houses of During the Period of Recovering After War and Period of High Development in Japan - Analysis on the Plan Composition of Houses from 1945 to 1973]." *Ashikaga kōgyō daigaku kenkyū shūroku* 26 (March 1998): 193-197.
- Lin, Zhongjie. *Kenzo Tange and the Metabolist Movement: Urban Utopias of Modern Japan*. New York: Routledge, 2010.
- Maekawa, Kunio, and Hiroshi Matsukuma. *Kenchikuka Maekawa Kunio no shigoto* [The work of Kunio Maekawa: A Pioneer of Japanese Modern Architecture]. Tokyo: Bijutsu shuppansha, 2006.
- "Makoto Motokura." *Sutajio kenchiku keikaku: Kenchiku Design Studio*. (2010). Accessed April, 2014. <http://www.kenchiku-keikaku.com/e/profile.html>.
- "Map." *Senri nyūtaun machibiraki 50-nen: kōshiki ibento kiroku* [Opening 50 Years of Senri New Town: Formal Event Record]. Suita-shi Toyonaka-shi Senri nyūtaun renraku kaigi, 2012-2013. <http://senri50.com/e53108.html>. Accessed June, 2015.
- McCullough William H. "The Capital and it Society." In *The Cambridge History of Japan Volume 2: Heian Japan*, edited by Donald H. Shively and William H. McCullough, 97-182. Cambridge: Cambridge University Press, 1999. doi: 10.1017/CHOL9780521223539.004.
- Merlin, Pierre. "New Town Movement in Europe." *Annals of the American Academy of Political and Social Science* 451, (09, 1980): 76-85. Accessed January 27, 2015. <http://www.jstor.org/stable/1043162>.
- Merlin, Pierre. *New Towns: Regional Planning and Development*. London: Methuen, 1971.
- Miller, Ian Jared, Julia Adeney Thomas, and Brett L. Walker. *Japan at Nature's Edge: The Environmental Context of a Global Power*. Honolulu: University of Hawaii Press, 2013.
- Minohara, Kei, Hiroshi Matsukawa, and Naoto Nakajima. *Kenchika ōtaka masato no shigoto* [The Work of Architect Masato Otaka]. Tokyo: Ekusunarejji, 2014.
- Miyazaki, Hayao. *Heisei tanuki gassen ponpoko*. 1994. Tokyo: Sutajio Jiburi. Videorecording.

- Morita, Tetsuo, Yoshihide Nakagawa, Akinori Morimoto, Masateru Maruyama, and Yoshimi Hosokawa. "Changes and Issues in Green Space Planning in the Tokyo Metropolitan Area: Focusing on the 'Capital Region Plan.'" *International Journal of GEOMATE* 2, no.1 (03, 2012): 191-196.
- Mumford, Eric Paul. *Defining Urban Design: CIAM Architects and the Formation of a Discipline, 1937-69*. New Haven: Yale University Press, 2009.
- Mumford, Eric Paul. *The CIAM Discourse on Urbanism, 1928-1960*. Cambridge, Mass: MIT Press, 2000.
- Naruse, Yasuhiro and Kenji Takahashi. "Tama New Town." Edited by Sadatsugu Nishiura. Presented at Steedman Summer Travel Fellowship Meeting on Tama New Town, Tama City, Japan. August 11, 2014.
- Naruse, Yasuhiro and Sadatsugu Nishiura, Takao Akimoto, Miki Yasui, Shunsuke Arakawa. *CPIJ News Letter* 29. Edited by The City Planning Institute of Japan, International Affairs Committee. Tokyo: The City Planning Institute of Japan, 2008.
- Nas, Peter, ed. *Directors of Urban Change in Asia*. London; New York: Routledge, 2005.
- Neitzel, Laura. *Living Modern: Danchi Housing and Postwar Japan*. Ph.D. Dissertation, Columbia University, 2004.
- Nobuhiko, Nakai and James L. McClain. "Commercial Change and Urban Growth in Early Modern Japan." In *The Cambridge History of Japan Volume 4: Early Modern Japan*, ed. John Whitney Hall, 519-595. Cambridge: Cambridge University Press, 1991. doi: 10.1017/CHOL9780521223553.012.
- Ogasawara, Yuko. *Office Ladies and Salaried Men: Power, Gender and Work in Japanese Companies*. Berkeley, Los Angeles, London: University of California Press, 1998.
- Ōshima, Ken Tadashi. "Denenchōfu: Building the Garden City in Japan." *Journal of the Society of Architectural Historians* 55, no.2 (06, 1996): 140-151. Accessed December 12, 2014. <http://www.jstor.org/stable/991116>.
- Ōshima, Ken Tadashi. *International Architecture in Interwar Japan: Constructing Kokusai kenchiku*. Seattle: University of Washington Press, 2009.
- Parutenon Tama. *Tama nyūtaun shōten koto-hajime: shōten no rekishi to Tama nyūtaun* [The Beginnings of Tama New Town Shops: Shop History and Tama New Town]. Tama, Tokyo: Parutenon Tama Kōekizaidan hōjin tamashi bunka shinkō saidan, 2011.
- Pass, David. *Vällingby and Farsta--From Idea to Reality; The New Community Development Process in Stockholm*. Cambridge, Mass: MIT Press, 1973.
- Pedersen, Kirsten Spliid. "Eleven New Towns: An Historical Comparative Study of The Structure and the Morphology of the New Towns and Their Subdivisions." PhD diss., Washington University in St. Louis, 1981.
- Pompili, Marco. *Dojunkai Apartments, Tokyo 1924-1934: l'abitazione collettiva giapponese e la città moderna = Collective Housing in Japan and the Modern City*. Italy: Dedalo, 2001.
- Rabinow, Paul. *French Modern: Norms and Forms of the Social Environment*. Cambridge, Mass: MIT Press, 1989.
- Reynolds, Jonathan M. *Maekawa Kunio and the Emergence of Japanese Modernist Architecture*. Berkeley: University of California Press, 2001.
- Robertson, Jennifer. *Native and Newcomer: Making and Remaking a Japanese City*. Berkeley: University of California Press, 1991.

- Roulet, Sophie, Sophie Soulié, and Toyō Itō. *Toyo Ito, Architecture of the Ephemeral*. Paris: Editions du Moniteur, 1991.
- Rujivacharakul, Vimalin, H. Hazel Hahn, Ken Tadashi Ōshima, and Peter Christensen. *Architecturalized Asia: mapping a continent through history*. Honolulu: University of Hawaii Press, 2013.
- Sadayuki, Mariko. “Jōsei no hatarakikata karamita danjō no jūshiki to raifusutairu ni tsuite: Tama nyūtaun ni okeru danjō kyōseikei no kyojū shisutemu ni kansuru kenkyū [Wife’s Working Style and Couple’s Consciousness of the Housing Environment and their Lifestyle: A Study of Residence Plans Aiming at Gender-Symbiotic Life at Tama New Town]. *Japan Women’s University Journal* 47 (03, 2000): 65-72.
- Sand, Jordan. “Landscape of Contradictions: The Bourgeois Mind and the Colonization of Tokyo’s Suburbs.” *Japanese Studies* 29, no. 2 (2009): 173-192. doi: 10.1080/10371390902893044.
- Sand, Jordan. *House and Home in Modern Japan: Architecture Domestic Space and Bourgeois Culture 1880-1930*. Cambridge, Mass: Harvard University Press, 2003.
- Satō, Katsumasa. *Senri nyūtaun—hanseiki no kiseki to sono konjitsu—* [Senri New Town—Traces of a Half-century and Today—]. Ichiura Housing & Planning Associates, (2010): Accessed March, 2015. http://www.ichiura.co.jp/newtown/pdf/senri_nt/all.pdf.
- Satō, Shigeru, et. al. *Dōjunkai no apātomento to sono jidai* [Dojunkai Apartments and that Era]. Tokyo: Kajima shuppankai, 1998.
- Scott, Andrew and Eran Ben-Joseph. *Renewtown: Adaptive Urbanism and the Low Carbon Community*. New York: Routledge, 2012.
- Scott, John, and R. J. Bromley. *Envisioning Sociology: Victor Branford, Patrick Geddes, and the Quest for Social Reconstruction*. Albany: State University of New York Press, 2013. *eBook Collection (EBSCOhost)*, EBSCOhost (accessed April 20, 2015).
- Scott, Stephen. “Just Housing? Evidence of Garden City Principles in a Postwar Japanese Housing Development.” Undergraduate Dissertation, New College of Florida, 2006.
- Senri nyūtaun sōgō hyōka ni kansuru chōsa kenkyū inkai. *Senri nyūtaun no sōgō hyōka ni kansuru chōsa kenkyū* [Investigative Study for the Senri New Town Comprehensive Evaluation]. Ōsakafu: Jūtaku toshi seibi kōdan, Ōsakafu jūtaku kyōkyū kōsha, Osaka jūtaku sentā, Osaka senri sentā, 1984.
- “Sento History.” *Tokyo Sento: Public Bath*. Tokyo Sento Association. Accessed June, 2015. <http://www.1010.or.jp/english/sento-history/>.
- Shapira, Philip, Ian Masser, and David W. Edgington. *Planning for Cities and Regions in Japan*. Liverpool: Liverpool University Press, 1994.
- Sherwood, Roger. *Modern Housing Prototypes*. Cambridge, Mass: Harvard University Press, 1978.
- “Showa 56-nen (1981) 1gatsu no tama sentā eki shūhen(kōkū sha shashin).” *Parutenon Tama: teiten satsuei purojekuto WEB gyararī*. Parthenon Tama. Accessed March, 2015. <http://www.parthenon.or.jp/teitensatsuei/gallery/teitengall.cgi?no=171&file=1>.
- Sōmushō tōkei. “Jūtaku • tochi tōkei chōsa to jūtaku jijō no utsurikawari [Statistic Report of Housing and Land, and Change in Housing Conditions].” *Statistics Japan*, 2003. <http://www.stat.go.jp/data/jyutaku/2003/panflet/5jyu.htm>.
- Sorensen, André, and Carolin Funck. *Living Cities in Japan: Citizens' Movements, Machizukuri and Local Environments*. London: Routledge, 2007.

- Sorensen, André. *The Making of Urban Japan: Cities and Planning from Edo to the Twenty-First Century*. London: Routledge, 2002.
- Suita City and Toyonaka City Senri New Town Correspondence Committee. "What is Senri New Town?" *Senri nyūtaun machibaraki*. August 1, 2013. <http://senri50.com/c4489.html>.
- Suitashi rōdō kumiai rengōkai. "Suita seikatsu: kōreika ga susumu senri nyūtaun [Suita Lifestyle: The Continuation of an Aging Society in Senri New Town]." *Suita shimin shinbun* 15, 2009. Accessed, January 2015. <http://www.suitasirouren.com/shimin/machi/09vol15-04.html>
- Suzuki, Shigebumi. *"51C" kazoku o ireru hako no sengo to genzai* ["51C" The Box in which Families are Put, Before the War and Today]. Tokyo: Heibonsha, 2004.
- Suzuki, Shigebumi. *"Ie" to "machi:" jūkyō shūgō no ronri* ["Home" and "City:" A Theory of Collective Housing]. Tokyo: Kajima shuppankai, 1984.
- Suzuki, Shigebumi. *Sumai no keikaku, sumai no bunka: suzuki shigebumi jūkyō ronshū* [The Design of Dwelling, the Culture of Dwelling: Suzuki Shigebumi's Treatise on Dwelling]. Tokyo: shōkokusha, 1988.
- "Tama New Town Minami-Osawa District Factory Outlet Mall: Architectural Concept and Zoning Plan for '(Temporary) Minami-Osawa Shopping Center.'" *Mitsui Fudosan*. December 1, 1999. http://www.mitsufudosan.co.jp/corporate/news/1999/1201_02/index.html.
- Tama nyūtaun gakkai ākaibu kenkyū bukai. *Tama nyūtaun ākaibu purojekuto dai 1 hen: sōsōki ~ chūkōki no yume to kunō wo shiru* [Tama New Town Archive Project Part 1: Understanding the Dreams and Afflictions from Beginning ~ Restoration]. Hachioji: Tama nyūtaun gakkai, 2010.
- Tama nyūtaun gakkai ākaibu kenkyū bukai. *Tama nyūtaun ākaibu purojekuto dai 2 hen: midori & jūkankyō shisan no "naritachi" wo himotoku* [Tama New Town Archive Project Part 2: Unraveling the "Structure" of Green & Living Environment Assets]. Hachioji: Tama nyūtaun gakkai, 2010.
- "Tama nyūtaun no hajime no tatekae: suwa 2 chōme jūtaku tatekae teikaku [The Beginning of Reconstruction of Tama New Town: Suwa District 2 Housing Reconstruction Plan]." *Shinkenchiku* 89, no.2 (02, 2014): 192-199, 205.
- Tanabe, Hiroshi. "Problems of the New Towns in Japan." *GeoJournal: An International Journal on Human Geography and Environmental Sciences* 2, no.1, (1978): 39-46. Accessed January 27, 2015. <http://www.jstor.org/stable/41142068>.
- Tenda, Shigeru. "Senri nyūtaun no kore made to kongo: machibiraki kara 50-nen wo hete [Senri New Town From Past, Present to Future ~Fifty Years Since its Opening~]." *GBRC: General Building Research Corporation* 38.3 (07, 2013): 18-29.
- "The Environs of Tama Center Station." *Tokyo Seen From the Sky*. Tokyo Metropolitan Government. Accessed March, 2015. <http://www.koho.metro.tokyo.jp/PHOTO/contents/sp1/gallery/020299.html>.
- "The Hampstead Garden Suburb." *The British Medical Journal* 1, no. 2359 (1906): 639. Accessed June, 2015, <http://www.jstor.org.libproxy.wustl.edu/stable/20288963>.
- "Tokyo | Administrative Subdivision, Japan." *Encyclopedia Britannica*. Accessed April 27, 2015. <http://www.britannica.com/EBchecked/topic/598409/Tokyo>.
- "Tokyo-Yokohama Metropolitan Area | Japan." *Encyclopedia Britannica*. Accessed April 27, 2015. <http://www.britannica.com/EBchecked/topic/598501/Tokyo-Yokohama-Metropolitan-Area>.

- Tsubaki, Tatsuya. "Anglo-Japanese Exchanges in Town Planning—The case of Tama New Town in the 1960s and William A. Robson—" *Discussion Paper Series*. Nagoya: Institute of Economics, Chukyo University, November 2002.
- Tyner, Colin. "Bedroom Towns: Home is where you commute from." *The Japan Times: Weekly Online*. Feb. 26, 2011. Accessed October 2013. <http://weekly.japantimes.co.jp/feature/bedroom-towns-home-is-where-you-commute-from>.
- Ueno, Chizuko and Jordan Sand. "The Politics of Memory: Nation, Individual and Self." *History and Memory* 11, no.2 (Fall/Winter, 1999): 129-152. Accessed January 15, 2015. <http://www.jstor.org/stable/10.2979/HIS.1999.11.2.129>.
- Ueno, Chizuko. "Kazoku wo ireru hako kazoku wo koeru hako [Boxes in which Families are Put Boxes through which Families Pass]. Tokyo: Society of Research & Design, (11, 2004): <http://www.k-system.net/butsugaku/>.
- Ueno, Jun, and Masumi Matsumoto. *Tama nyūtaun monogatari: Ōrudotaun to yobasenai* [Legend and Topics on Tama New Town: It Cannot be Called an Old Town]. Tokyo: Shikashima shuppankai, 2012.
- Urushima, Andrea Yuri Flores. "Genesis and Culmination of Uzō Nishiyama's Proposal of a 'Model Core of a Future City' for the Expo 70 Site (1960-73)." *Planning Perspectives* 22 (10, 2007): 391-416.
- Usui, Kazuo. *Marketing and Consumption in Modern Japan*. Routledge Studies in the Growth Economies of Asia 122. Abingdon, Oxon: Routledge, 2014.
- Van Goethem, Ellen. *Nagaoka: Japan's Forgotten Capital*. Leiden, Boston: Brill, 2008. eBook Collection (EBSCOhost), EBSCOhost, (accessed April 19, 2015).
- Ward, Stephen V. ed. *The Garden City: Past, Present, and Future*. London: E & FN Spon. 1992.
- Waswo, Ann. *Housing in Postwar Japan: A Social History*. London: Routledge Curzon, 2002.
- Yamamoto, Shigeru. *Nyūtaun saisei: jūkankyō manejimento no kadai to tenbō* [New Town Restoration: Residential Environment Management Topics and Views] Kyoto: Gakukei shuppansha, 2009.
- Yamato, Minoru. *Miryoku aru machi tsukuri: Jūtaku Toshi Seibi Kōdan no toshi saikai hatsujigyō* [Breaking New Ground: Projects of the Housing and Urban Development Corporation]. Tokyo, Japan: Process Architecture, 1993.

